VOL. LXXXIV PART FIVE

JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY

MAY 1959

	PAGE
The Secretary's Page	197
Arrangements for Chelsea Show, 1959	200
Notes from Wisley	203
Frank Kingdon-Ward, O.B.E., M.A., F.L.S., V.M.H., 1885-1958. *Illustrated*	206
Lord Strathcona and his Garden on the Island of Colonsay. By MRS. R. M. STEVENSON. *Illustrated*	212
The Production of Strawberries from One-year-old Plants. By BEATRIX HAVERGAL, N.D.H. *Illustrated*	213
Recent Improvements in Crop Cultivation and Management. By G. D. LOCKIE, N.D.H. *Illustrated*	222
WISLEY TRIALS 1958:	
Perennial Asters	234
Dahlias	235
Penstemons, Raised from Seed	239
Perennial Phlox	239
Self-blanching Celery	241
Plants which received Awards in 1958: Orchids	242
Fellows wishing to obtain Plants Rare in Cultivation	244
Book Notes	245

VINCENT SQUARE, LONDON, S.W.1

Telephone: VICTORIA 4333

One claim only for

Bio

"Results"

"Mr. Montgomery, of Blackpool, is a PROFESSIONAL Grower and he KNOWS from experience that Bio gives RESULTS!"

"For the first time I have given my garden an intensive Bio course. The results have been truly amazing. I could not ask for more convincing proof."—*M. Bruce, Darlington.*

"I have used Bio HUMUS in conjunction with Bio PLANT FOOD in the cultivation of chrysanthemums, dahlias and green-stuff with tremendous success. The results have really to be seen to be believed."—*From the Secretary of a Horticultural Society in Kent.*

★ **RING CULTURE**—Bio plant food is the ideal formulation for RING CULTURE of tomatoes.—(6 : 6 : 7).

Bio HUMUS is a well packed, **organic compost-manure**, pre-digested and fortified with all the extras found in Bio PLANT FOOD. Bio Humus is ready for *immediate* use beneath new plants or as a mulch for existing ones.

Bio Liquid Plant Food is MORE than just a liquid manure. Bio is made with *natural* humus. Bio products are made with beneficial soil bacteria, plant foods, seaweed colloids, trace elements and growth promoting hormones—everything plants need to develop their natural potential.

"BE YOUR OWN GARDENING EXPERT" is *just out!*

There has never been a gardening book like this one. In a simple, imaginative way it sets out the answers to all the basic gardening questions never before found in one book. Filled with valuable tables and colour charts, and including a *FREE* soil tester, this sensational book will be valued by skilled and unskilled gardeners alike. Get a copy from your garden shop, it's only 1/6.

Bio Humus from 7 lb. 4/6 and in 14 lb., 28 lb. and 56 lb. sizes. Bio Plant Food from 4 fl. oz. 2/- also in 16 fl. oz., quart, ½ gal., and 1 gal. sizes; and Baby Bio for your house plants 1/9 per bottle.

FROM YOUR GARDEN SHOP

P.B.I. Ltd., Waltham Abbey, Essex

By appointment to H.M. Queen Elizabeth II Garden Contractors and Horticultural Builders William Wood & Son Ltd.

By appointment to H.M. Queen Elizabeth the Queen Mother Garden Contractors and Horticultural Builders William Wood & Son Ltd.

MAY

May is the poet's month, 'the sweet o' the year' when spring and summer join hands for a few enchanted days.

It can also be a time in which to pause for a while in our gardening and to consider the garden. We speak of not being able to see the wood for the trees, and in the same way we are in danger of losing sight of the garden, not so much for the plants, but because an increasing preoccupation with gardening as a scientific pursuit distracts our attention from the essential fact that the garden is a form of art no less than painting or music, and must depend for its success on the intrinsic quality of the design.

If you have a new garden to make or an old one to alter our design and construction service is at your disposal.

William Wood and Son Limited

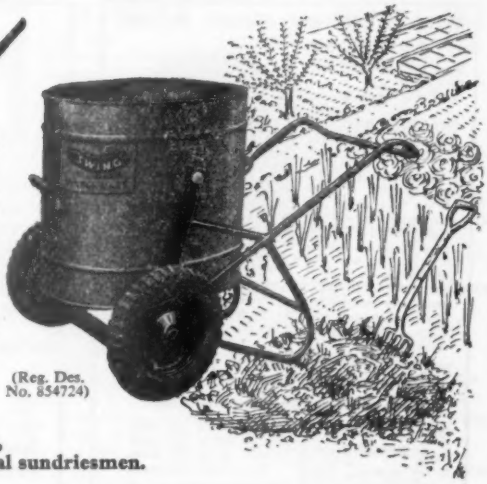
TAPLOW · BUCKINGHAMSHIRE

Garden Designers and Contractors

Easy does it!

The 'Swing' all-purpose WATER CART provides abundant capacity for water, manure, etc., without waste. Light, easy to handle—but very sturdily constructed. Tips easily. Heavily Galvanized Container, Welded Tubular Steel Frame, Solid or Pneumatic Rubber Tyred or Unbreakable All-Steel Wheels. Countless uses—for carrying liquids and solids.

6-sizes—15 to 50 gallons.



(Reg. Des. No. 854724)

Stocked by Geo. Munro, Carters, Suttons and all good horticultural sundriesmen.

alfred allen & SON LTD

LOWER GORNAL, Nr. DUDLEY

London Office: 23 LAWRENCE LANE, E.C.2 TEL: MONARCH 2978

A4288

LEONARDSLEE GARDENS
HORSHAM

SIR GILES LODER, Bart.,
will open the above on

ALL SUNDAYS from
APRIL 26th to MAY 31st.
WHIT-MONDAY and
WEDNESDAYS, THURSDAYS
and SATURDAYS in MAY

ADMISSION 2/-
(SUNDAYS and WHIT-MONDAY 2/6)
Car Park 1/- Buffet Tea Weekdays
10 a.m. to 7 p.m. No Dogs Allowed

A Reminder
AFRICAN VIOLETS
(SAINT PAULIAS)

The period when potted plants in bud and bloom are available is **MAY TO SEPTEMBER,** and our Gold Medal Collection of named varieties has again been augmented with some thrilling new varieties from the U.S.A.

Assuredly
THE FINEST COLOURS
THE BEST GROWERS
THE MOST FLORIFEROUS
and the
CLEANEST STOCK
are those offered by

W. C. WICKS LTD.
AFRICAN VIOLET SPECIALISTS
NOTTINGHAM

Descriptive List of over 50 varieties. Natural colour plate and cultural instructions. Price 6d., plus 3d. postage.

THERE IS ONLY ONE GENUINE ORIGINAL
STRAWBMAT
and we make it—so

IMAGINE THIS IS A STRAWBERRY

It is unblemished by slugs or grit. You can always pick fruit like this if only you will use **STRAWBMATS** instead of loose, untidy straw. You will also get them earlier. Why not **CHEAT THE SLUGS** and trap the sun's heat? As recommended by Adam the Gardener (*Sunday Express*), and Mr. Middleton's Gardening Guide, and as supplied to the Country Gentlemen's Association.

NOTHING CHEAPER CAN BE BOUGHT
NOTHING BETTER CAN BE GOT

Preferably obtain from your local dealer:

30/- for 36 12" mats.
42/- for 36 18" mats.
60/- for 36 21" mats.
81/- for 36 24" mats.

OR, if time does not press, send S.A.E. for our beautiful folder* to:

STRAWBERRY PROTECTION CO.,
52, LANIVET, BODMIN, CORNWALL

* After seeing this you will realise the advantages of Strawbmats in a flash—they should last you for five years!

BY APPOINTMENT
TO HER MAJESTY THE QUEEN
SUPPLIERS OF
HORTICULTURAL CHEMICALS

BENTLEY'S
CHRYSANTHEMUM FERTILISERS
are used and recommended by nearly all the country's leading growers including:
J. B. Stevenson, Esq., Colham Green Nurseries; A. G. Vinten Ltd., Balcombe; Keith Luxford Ltd., Sawbridgeworth; and H. Shoesmith Ltd., Woking.

At the 1958 N.C.S. Show regular users of
BENTLEY'S
CHRYSANTHEMUM FERTILISERS
gained the following awards:
The Centenary Trophy, the Bentley Trophy, the Keith Luxford Cup, the George Prickett Challenge Trophy, the George Monro Cup.

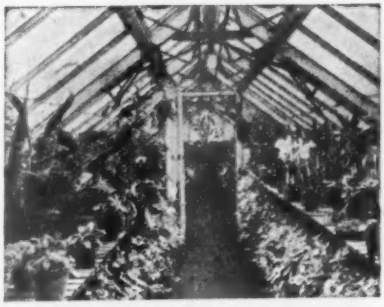
All these prize-winning blooms were fed exclusively with:
BENTLEY'S
CHRYSANTHEMUM FERTILISERS
Full details and complete catalogue on request.

JOSEPH BENTLEY LIMITED
Horticultural Manufacturing Specialists
BARROW-ON-HUMBER, LINCS.

GREENHOUSES WITH PERSONALITY

Strawson Greenhouses are designed and built to meet your specific needs. Whether you are a specialist grower or an amateur and wherever in the country you are, Mr. Strawson himself will gladly come along on request to give you his expert advice and will supervise the design and building of your Greenhouse.

Strawson Greenhouses are praised and recommended by many leading horticulturists who rely upon Strawson's to house their prize plants — give yours the same protection.



COME AND SEE THE
STRAWSON DISPLAY
ON SITE No. 8
NORTHERN ROAD
AT THE
CHELSEA FLOWER SHOW

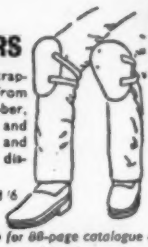
STRAWSON

Consult by letter or telephone at:
G. F. STRAWSON & SON *(Ref. B/15*
HORLEY, SURREY · TEL. HORLEY 130

AIDS TO EASIER GARDENING

THE PINNER RAIN GAUGE
An accurate inexpensive rain gauge, self registering, measures from 1 point to 6 inches of rainfall. Made from weather resisting plastic. Essential to keen gardeners. Full instructions enclosed. 20/- *Carriage FREE.*

KNEE PROTECTORS
These new rubber strap-on protectors, made from soft resilient rubber, weatherproof inside and out, are light, easy and comfortable and overcome all discomfort when kneeling.
17/- per pair, postage and packing 1/6
9/- each, postage and packing 1/-



CLOGGEES
The Ideal Gardening Shoes
Moulded all rubber, soft and comfortable. Do not tire the feet. Easy to slip on and off, light, easily cleaned, rotproof, and guaranteed to withstand many years' hard wear under all conditions.
Sizes 3-5 17/- per pair. Sizes 6-12 18/6 per pair, postage and packing 2/-.

THE HORTI-BALL
Simplifies the erection of temporary garden structures, Fruit Protection Cages, Pea and Bean Supports, etc. All erected easily, quickly, simply with the Horti-Ball, the new unique universal rubberised joint for all garden structures. Can be used with bamboos or any stakes.
22/6 per doz., p. & p. 2/-; 12/- for 6, p. & p. 1/6

OTHER PRODUCTS
Long-handled FLOWER GATHERER avoids stooping, picks without damaging flowers.
59/6 carriage free

—

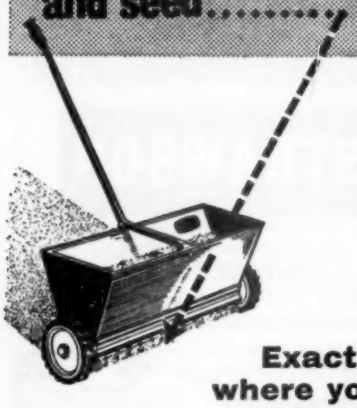
ALKATHENE WATER PIPING provides water at any or every point.
Full details on request

Send 3d. stamp for 88-page catalogue containing many other "aids to easy gardening."
All orders and enquiries promptly attended to.

E. J. WOODMAN & SONS (PINNER) LTD. (Dept. R.H.S.)
19-25 HIGH STREET, PINNER, MIDDLESEX
Telephone: Pinner 802 (7 lines)

Quillot

For ACCURATE distribution of Fertiliser and seed.....



Exactly where you need it

THE GARDEN MODEL (*illustrated*), with a distributing width of 18 in. and hopper holding 14 lb. of material, this model is ideal for private lawns and flower beds, etc. A quarter of an acre can be covered in less than two hours even on a windy day, and the job is done far better than it can possibly be done by hand. The standard roller distributes many fertilizers at 4 oz. per sq. yd. or grass seed at 1 oz. per sq. yd.

Price £4.19.6

THE PARK MODEL distributes over a width of 39 in. with a hopper capacity of 112 lb. This model is ideal for sports grounds, golf courses, playing fields, parks, etc. It can be operated by hand or tractor towed if required. The standard roller distributes fertilizers at the rate of 2 oz. per sq. yd. or grass seed at ½ oz. per sq. yd.

Price £35.15.0

Additional meter rollers are available for both the above models which enable any type of fertilizer, seed, top dressing or granular material to be distributed at a pre-determined rate.

FREE FULLY ILLUSTRATED BROCHURE ON REQUEST. Quillot Seed Distributors are available from good stores, seed merchants and ironmongers, or if in any difficulty, write to the manufacturers:

QUILLOT LIMITED
Dept. R.H.S.
74 Lonsdale Road, Tolworth, Surrey
Telephone: ELMbridge 1973

"This makes all the difference..."
The Wilkinson Sword pruner does its job with a sensitive and surgical precision giving the perfect clean cut. It works on the principle of the pruning knife.
The action is effortless; it will not bruise even the tenderest shoot, nor falter on the toughest.
PRICE 30/-
WILKINSON SWORD

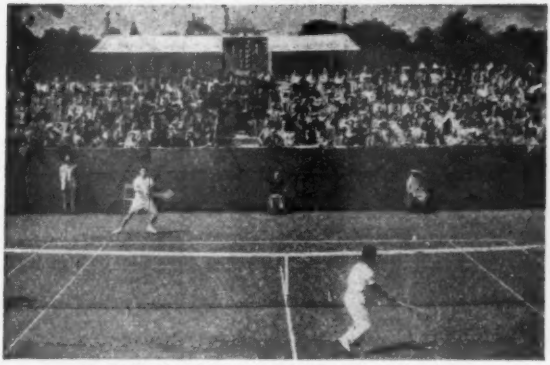
design for better gardening

WILKINSON SWORD LIMITED LONDON W.4

EN-TOUT-CAS

HARD LAWN TENNIS COURTS

Another new En-Tout-Cas 'Everede' Court has recently been constructed at The All England Club, Wimbledon



Men's Singles, British Hard Court Championships on 'En-Tout-Cas' Court, 1958

BOWLING GREENS - FOOTBALL GROUNDS - CRICKET PITCHES
RUNNING TRACKS - SWIMMING POOLS - SQUASH RACKETS COURTS

THE EN-TOUT-CAS CO., LTD.

SYSTON, LEICESTER (SYSTON 3322/7) *London Office: Harrods (4th Floor), Knightsbridge, S.W.1*

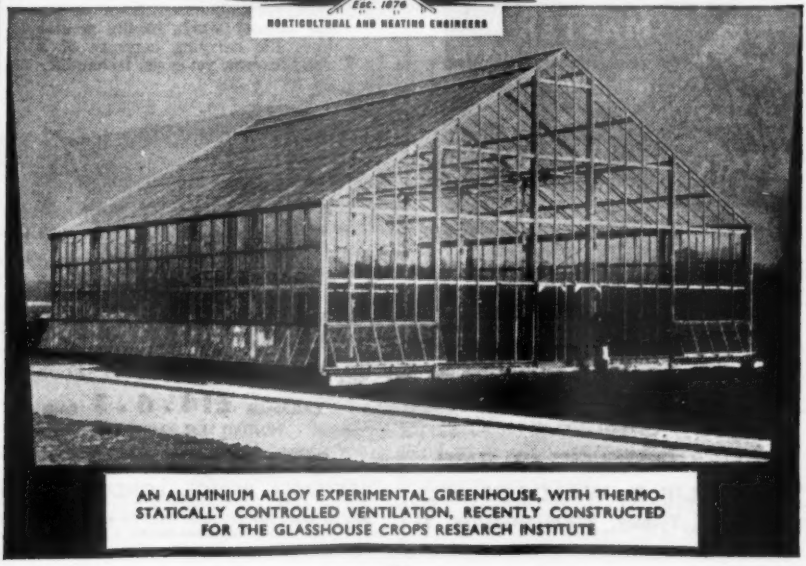
Neasham Road, DARLINGTON

W. RICHARDSON AND Co. LIMITED

Est. 1870

HORTICULTURAL AND HEATING ENGINEERS

117 Victoria Street, LONDON S.W.1



AN ALUMINIUM ALLOY EXPERIMENTAL GREENHOUSE, WITH THERMOSTATICALLY CONTROLLED VENTILATION, RECENTLY CONSTRUCTED FOR THE GLASSHOUSE CROPS RESEARCH INSTITUTE

SPRAYING

THE FALCON
Pneumatic Sprayer

Supplied with 28-in. instantaneous cut-off lance and wide filling opening.

For easy spraying at lowest cost

Working capacity: 2 gallons Price: **£7.5.0**

Also 15ft. Aluminium Telescopic Lance **£3.9.9**

Illustrated Catalogue from:

COOPER, PEGLER & CO. LTD.

P.O. Box 9-67, BURGESS HILL, SUSSEX

DRON-WAL *Supreme* SPRAYERS & SYRINGES

Highly suitable for all Horticultural and Greenhouse Spraying

ILLUSTRATED LISTS OF SYRINGES, SPRAYERS ETC., SENT UPON REQUEST

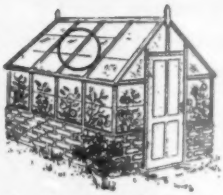
OBTAINABLE FROM

SEEDSMEN, IRONMONGERS AND STORES

The PHILIP B. WALDRON CO.

Kings Road, Tyseley, BIRMINGHAM, 11

Sealed with SYLGLAS



Quickly and easily applied, self-adhesive Sylglas Tape makes a 100% waterproof seal that lasts practically forever. It's the handiest, cheapest, most effective way to glaze or seal. Get a roll today. Always keep one handy.

30 ft. roll, 1 inch wide, price 2/9. Other widths in ½ inch steps to 4 inches. Prices pro rata.

Sylglas Cord and Mastic also available for plugging and caulking.

From Seedsmen, Ironmongers, Hardware Merchants, Builders' Merchants and big stores. If in difficulty, write for name of nearest stockists.

THE SYLGLAS COMPANY

81 Knight's Hill, West Norwood
London, S.E.27

Tel.: GIPsy Hill 4247 (5 lines)
Telegrams: Snowwhite, London, S.E.27

BOWLEY'S GARDEN TRUCKS

A strongly constructed well-balanced truck, specially designed for garden and nursery work, having several times the carrying capacity of a wheelbarrow yet easier to handle.

MODEL 1A

PLATFORM SIZE	WHEELS
4 ft. by 2 ft. with 12" DETACHABLE TOP	12" by 2" ROLLER BEARING CUSHIONED TYRED

CARRIAGE **£14.6.3** PAID

HINGED SIDE 12/6 EXTRA

S. Bowley & Son Ltd.

BATTERSEA BRIDGE, LONDON, S.W.11

Send for illustrated catalogue (HSJ) for complete range of sizes and models

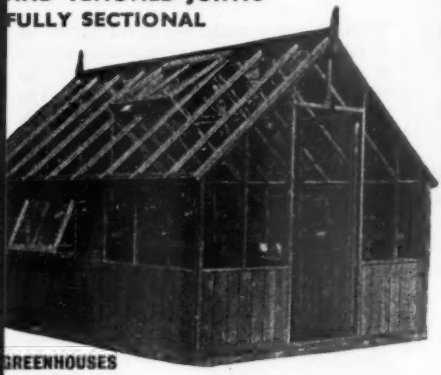
HALL'S GUARANTEED ANTI-ROT CEDARWOOD

SHEDS • GREENHOUSES • WORKSHOPS

Last Longer - Look Better!

NO PAINT NEEDED · MORTICED AND TENONED JOINTS FULLY SECTIONAL

SHEDS from £13.15.0



GREENHOUSES from £19.0.0

NO DEPOSIT. First payment with order and balance over 6, 12, 18 or 24 months.

FREE *Write today for Super Catalogue showing Cedarwood in full natural colours.*

FREE DELIVERY ENGLAND & WALES

R. H. HALL & CO. (KENT) LTD · 44 PADDOCK WOOD · TONBRIDGE · KENT

MURPHY AIDS to BETTER GARDENING

MURPHY LIQUID MALATHION

This highly efficient insecticide will control many insect pests and is particularly effective against Aphids (Green and Black Fly), Mealy Bug, Scale Insects, White Fly adults, Red Spider, Thrips, Leaf Miner, etc.

4-oz. bottle 5/6
8-oz. bottle 10/-
1 pint tin 21/6

ORTHOCIDE

garden fungicide containing

CAPTAN

Controls many important fungus diseases on a wide range of crops. It is especially effective against Black Spot on roses and Scab on apples and pears. It will also control Storage Rots and Bulb and Corm Rots.

Size 1, 3/-
(makes 5 gallons spray)
Size 2, 9/6, Size 4, 27/6

Combined SEED DRESSING

A pinch shaken up in a packet of seeds will protect seeds and seedlings from attacks by soil borne pests and diseases. Its use will increase germination and produce healthier, more vigorous crops.

1/6 per packet
Sufficient for the average garden

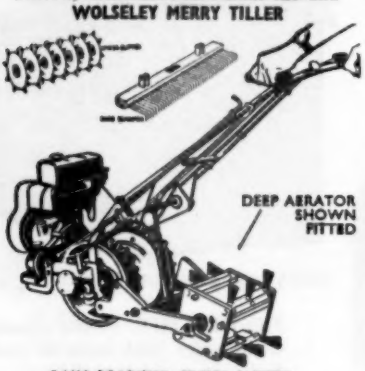
Available from Seedsmen, Ironmongers and Chemists

THE MURPHY CHEMICAL CO. LTD., WHEATHAMPSTEAD, HERTFORDSHIRE

Bring your Pest and Disease problems along to us on Stand 22, Chelsea Flower Show

"SISIS" LAWNMAN TURF MANAGEMENT EQUIPMENT

For HAND use and for use with the
HOWARD ROTAVATOR BANTAM, BULLFINCH, DEMON, SHAY ROTOGARDENER 120 and WOLSELEY MERRY TILLER



RAKE SCARIFIER, SPIKER SLITTER
TURF AERATOR (illustrated)
WHALEBONE BRUSH and PRESSURE ROLLER
Quickly and easily interchanged without tools. Incorporating the Patent Resilient Control.

Full details from the Patentees and Sole Makers:
W. HARGREAVES & CO. LTD.
CHEADLE, CHESHIRE Phone GATley 4262

KILL SLUGS—

The cheap way!

A leading authority writes:
'. . . the higher the food value of the attractant the more slugs are attracted.'

- This is why Metaldehyde is offered to the gardener unmixed. He can use FRESH attractant — bran, breadcrumbs, etc., with concentrated Metaldehyde to destroy MORE slugs at LESS cost than with ready mixed slug baits.
- Each 2/- METALDEHYDE POWDER PACK makes enough bait to treat 300 sq. yds.
- A Ministry of Agriculture Approved Product.

From your local stockist or direct from

H. R. NAPP LIMITED
(Dept. R.H.J.)
3 & 4 CLEMENTS INN, LONDON, W.C.2

SOMERSET EDUCATION COMMITTEE

SOMERSET FARM INSTITUTE

ONE-YEAR COURSE IN GENERAL COMMERCIAL HORTICULTURE

THE course provides sound instruction in both the practical and theoretical aspects of commercial horticulture, and leads to the National Certificate in Horticulture. The Institute is officially recognised as the centre for one-year horticultural courses in the South-West region and possesses a well-equipped commercial horticultural department of 30 acres. Special attention is given to intensive methods of crop production.

Applications for the next course, commencing September, 1959, should be made to THE PRINCIPAL, SOMERSET FARM INSTITUTE, CANNINGTON, NEAR BRIDGWATER, from whom a prospectus and full particulars of entry may be obtained.

W. J. DEACON,
Chief Education Officer.

County Education Office,
Trull Road, Taunton.

Allwood's Cut Carnations

direct from the largest growers, are the ideal gift for all occasions.
Selected colours or unique mixed shades.
From
1 gn. to 5 gns.
per box
Write for Catalogue

Allwood Bros LTD. *Cut Flower Dept.*
HAYWARDS HEATH, SUSSEX (*Wivelsfield 232*)

For every spraying purpose

CHELSEA SHOW STAND No. 43

SOLO *Double Action* SPRAYER

For every spraying job — insecticide, limewash, creosote, etc., SOLO double-action spray does it quickly and efficiently. Made from solid brass with 3 nozzles, 2 ft. brass extension lance, angle bend. *MONEY BACK GUARANTEE.* 55/- COMPLETE

From Stores, Ironmongers or Manufacturers
Write for illustrated Leaflet:
SOLO SPRAYERS LTD.
(Dept. R.H.), Progress Road, Southend-on-Sea

new! different! unique!

Easy to fill—will not scratch sink.
Convenient to carry and beautifully balanced for pouring.
Completely enclosed to stop splashing.
Rustproof, lightweight and designed for easy storage.
Two *non-drip* roses supplied for coarse or fine spray—they clip *inside* the lid when not in use.

and doubly useful

Take off the top and it can be used as a bucket! *Graduated for measuring*, extra deep for pump or syringe spraying. Natural, with lid, etc., in choice of leaf-green or guardsman red.

49/6

EKCO *plastics*

WATERING CAN

From Departmental Stores, Hardware and Garden Shops and Ironmongers.

Please send full details of the Ekco Plastics Watering Can, Horticultural Tubes and Warm-glow Soil Heater.

NAME .....

ADDRESS .....

..... JRHS.12

EKCO PLASTICS LTD

..... SOUTHEND-ON-SEA · ESSEX .....

THE fortnightly show

a good excuse for lunch with a glass of wine at the Stores

modern dahlia tubers

True to name and colour. Several recent introductions are included. Separately packed in polythene bags

cactus varieties – all 50 ins
spring delivery

ARISTOCRAT, scarlet
PRIDE OF HOLLAND, pink
ARSENAL, yellow
ORANGE TRIUMPHATOR, orange
HOEK'S GLORY, lilac
WHITE FAVOURITE, white

decorative varieties – all 50 ins

ROBERT'S TREAT, scarlet
NAGEL'S SENSATION, pink
ELDERADO, yellow
HOUSE OF ORANGE, orange
THOMAS EDISON, violet
JAINE SAWYER, white

pompom varieties

POOKA, scarlet
LAMPE, pink
CLARISSA, yellow
ORANGE GLOW, orange
ANNEKE, purple-violet
WHITE ASTER, white

special offer – giant gladioli corms

Mixed from named varieties. All top sizes, 14 cm and over, 5/6 doz. 40/– 100

Postage on orders under £2, 2/3. Over £2, 3/6. Over £5, free

1959 Gardening List free on request

EVERYTHING FOR EVERYONE

A&N

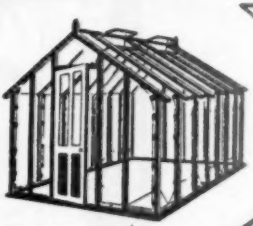
ARMY AND NAVY STORES
Westminster SW1 Victoria 1234 Day & Night
5 minutes' walk from RHS Hall

OAKWORTH

SEASONED OAK GREENHOUSES

"ZZ" Series. All 5' 2" wide, from £29.10.0.

"D" Series. All 8' 3" wide, from £37. 5. 0.



5 YEAR GUARANTEE

Lean-to's. Various widths, from £20.5.6

★ SCIENTIFICALLY CONSTRUCTED TO GROW MORE AND LAST LONGER
★ TREMENDOUS STRENGTH ★ MAXIMUM LIGHT
★ WILL NOT WARP OR ROT ★ ALL MODELS EXTENDIBLE

Complete prefabricated units. Delivered free to your door. Erected on delivery. Deferred Terms. Full details of prices and 50 sizes available in:

FREE CATALOGUE from Oakworth Greenhouses, Dept JRH, Wellington, Salop.

THE NATION'S GREENHOUSE SPECIALISTS

LIQUINURE
LIQUID MANURE
LIQUINURE
LIQUID MANURE
A perfectly balanced Plant Food for bigger and better crops. Three types—General, Tomato Special and Flower Special. Sold everywhere in 2/- and 3/9 bottles.
Also half gall. 13/- carr. paid.
New 1-gall. Polythene Container 24/-
Automatic Diluter 24/-
Write for a copy of 128 pp. fully illustrated book "Liquid Manure Gardening" 1/6 post free
LIQUINURE SALES
BOREHAM WOOD, Herts.

WPS-42

JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY

VOL. LXXXIV PART FIVE

May 1959

THE SECRETARY'S PAGE

ANNOUNCEMENTS—MAY AND JUNE

Shows

TUESDAY, May 5 12.30 P.M. to 6 P.M. WEDNESDAY, May 6 10 A.M. to 5 P.M.	Fortnightly Flower Show and National Rose Society's Competition, in the Old Hall. Rhododendron Show, in the New Hall. National Auricula and Primula Society's Competition (May 6 only), in a Committee Room in the New Hall.
TUESDAY, May 26 to FRIDAY, May 29	Chelsea Show.

For details see pp. 200–202.

TUESDAY, June 9 12 NOON to 6 P.M. WEDNESDAY, June 10 10 A.M. to 5 P.M.	Fortnightly Flower Show, Flowering Tree and Shrub Competition, British National Carnation Society's Competition, Cactus and Succulent Society's Competition and Geranium Society's Competition, in the New Hall. British Iris Society's Show, in the Old Hall.
TUESDAY, June 23 12 NOON to 6 P.M. WEDNESDAY, June 24 10 A.M. to 5 P.M.	Fortnightly Flower Show and Cactus and Succulent Competition for Amateurs (Sherman Hoyt Trophy), in the New Hall.

Shows—*continued*

FRIDAY, June 26 11 A.M. to 7 P.M. SATURDAY, June 27 10 A.M. to 5 P.M.	National Rose Society's Show. (Both Halls on June 26; New Hall only on June 27.)
TUESDAY, June 30 12 NOON to 7 P.M.	National Sweet Pea Society's Show, in the New Hall.
TUESDAY, June 30 12 NOON to 6 P.M. WEDNESDAY, July 1 10 A.M. to 5 P.M.	Delphinium Society's Show, in the Old Hall.

Lectures

TUESDAY, May 5, at 3 P.M. "Rhododendrons for full Sun", by MR. F. STREET.

TUESDAY, June 9, at 3 P.M. "Damage by Birds to Horticultural Crops", by MR. E. N. WRIGHT, B.SC.

TUESDAY, June 23, at 3 P.M. "Meconopsis Species and Hybrids", by MR. A. EVANS.

Demonstrations at Wisley—The following demonstration will be given at Wisley, that on the second day being a repetition of that given on the first.

May 13–14. Summer Pruning of Shrubs. (Commencing at 2 P.M.)

Scottish Rhododendron Show—The Scottish Rhododendron Show will be held in the Freemasons Hall, 96 George Street, Edinburgh, on Tuesday and Wednesday, May 12 and 13. The Rhododendron and Camellia Committee will meet at the Show on Tuesday, May 12, to consider rhododendrons submitted for certificate. Rhododendrons intended for the Committee's consideration should be entered with the Secretary of the Committee between 10.30 A.M. and 11.30 A.M. that day.

Lily Conference—A four-day Conference on Lilies, Fritillaries and Nomocharis will be held from Tuesday, July 7, to Friday, July 10. It is hoped that many Fellows and Associates will find it possible to attend and take part in the Discussions. Those who hope to attend on one or more days are asked to be good enough to notify the Secretary so that adequate arrangements may be made.

International Orchid Conference, 1960—The Third World Orchid Conference, which is being sponsored jointly by the American Orchid Society, the British Orchid Growers' Association, and the Royal Horticultural Society, will be held in London in 1960. The first Conference was held in St. Louis, Missouri, U.S.A., in 1954, and the second in Hawaii, in 1957.

The exhibition of orchids arranged in connexion with the Conference will be staged at Chelsea Show on Tuesday, Wednesday, Thursday and

Friday, May 24–27, and the Conference will be held in the following week on Monday, Tuesday, Wednesday, and Thursday, May 30 and 31 and June 1 and 2. It will be followed by excursions to leading orchid growers' establishments on Friday, Saturday and Sunday, June 3, 4 and 5.

A joint Committee of the three sponsoring bodies is arranging a comprehensive programme covering a wide range of subjects of interest to amateur and professional orchid growers, and well-known authorities from many countries are being invited to deliver papers on the subjects in which they have specialized.

All who are interested and would like to have further particulars in due course are asked to notify The Secretary, The Third World Orchid Conference, c/o The Royal Horticultural Society, Vincent Square, London, S.W.1.

Gardeners' Sunday—This year many gardens will be opened to the public on two Sundays, viz. May 3 and June 28, in aid of the Gardeners' Royal Benevolent Institution and the Royal Gardeners' Orphan Fund, and some gardens will be open on other days.

The Gardeners' Royal Benevolent Institution urgently needs funds to maintain and endow its residential country home for old gardeners and their wives and widows, as well as for its work of providing pensions and grants for retired gardeners living in distressed circumstances in their own homes. The Royal Gardeners' Orphan Fund provides allowances for the fatherless children of gardeners and its assured funds are insufficient for the purpose. It is hoped that many Fellows and their friends will support these gardening charities by visiting gardens opened under this scheme. The Society's Gardens at Wisley do not fall under this scheme as on Sundays they are open only to those presenting Fellows' or Associates' tickets.

A booklet containing details of some 500 openings may be obtained from The Organiser, Gardeners' Sunday, Four Winds, Seale, Farnham, Surrey, price 1*s*., post free.

Publications—*Rock Gardens*, by E. B. ANDERSON, late President of the Alpine Garden Society, will be published during this month in the Series of Penguin Handbooks prepared in collaboration between the Society and Penguin Books Ltd. and may be obtained from The Secretary. Price 5*s*., postage and packing 9*d*.

History of Nursery Gardens. The EARL OF MORTON is collecting material on the early history of Nursery Gardens for a series of articles in the Society's JOURNAL and would be grateful for any information relating to the period prior to 1900. Letters should be addressed direct to him at The Hatch, Churt, Surrey.

ARRANGEMENTS FOR CHELSEA SHOW, 1959

Chelsea Show will, as usual, be held in the grounds of the Royal Hospital, Chelsea, London, S.W.3.

Private View – There will be a Private View on Tuesday, May 26, from 8.30 A.M. to 8 P.M. Admission may be gained only on surrender of the detachable parts of Fellows' and Associates' tickets. For details please refer to the paragraph relating to Fellows' and Associates' tickets.

In no circumstances, by payment or otherwise, can extra admissions to the Private View be allowed.

Dates of Show – The Show will be held on Wednesday, Thursday and Friday, May 27, 28 and 29.

Times – Fellows and Associates

Fellows, Associates, and holders of Fellows' Transferable tickets are admitted free of charge during the following periods:

Wednesday, May 27	8.30 A.M. to 8 P.M.
Thursday, May 28	8.30 A.M. to 8 P.M.
Friday, May 29	8.30 A.M. to 5 P.M.

The Public

The Charges for admission are:

Wednesday, May 27	8.30 A.M. to 8 P.M.	– £1
Thursday, May 28	8.20 A.M. to 8 P.M.	– 10*s.*
Friday, May 29	8.30 A.M. to 12 NOON	– 5*s.*
	12 NOON to 5 P.M.	– 2*s.* 6*d.*

In no circumstances can admission be gained by the public at any time on Tuesday, May 26.

Admission of Children – Children under five years of age cannot be admitted. The charge for the admission of children of five years and over will be the same as for adults.

Parties – No reduction in the price of admission can be made for parties of visitors, but tickets may be obtained beforehand to save time on arrival. Application, accompanied by a remittance to cover the cost of the tickets required, should be made to the Secretary, The Royal Horticultural Society, Vincent Square, London, S.W.1, early in May. Such applications *must* reach the Secretary not later than the first post on Friday, May 22.

Fellows' and Associates' Tickets – A Fellow subscribing 4 guineas annually receives 1 non-transferable and 5 transferable tickets. The non-transferable ticket has two *detachable* parts which will admit the Fellow and one other person to the Private View on May 26.

A Fellow subscribing 3 guineas annually receives 1 non-transferable and 2 transferable tickets. The non-transferable ticket has two *detachable* parts which will admit the Fellow and one other person to the Private View on May 26.

A Fellow subscribing 2 guineas annually receives 1 transferable ticket. This ticket has a *detachable* part which will admit only the Fellow to the Private View on May 26.

An Associate receives 1 non-transferable ticket. This ticket has a *detachable* part which will admit only the Associate to the Private View on May 26.

Each Fellow's ticket, whether non-transferable or transferable, will admit one person at any time when the Show is open on Wednesday, Thursday, and Friday, May 27, 28 and 29, but the non-transferable ticket may, of course, be used only by the Fellow to whom it is issued. An Associate's ticket may be used only by the Associate to whom it is issued.

Tickets may not be left at the turnstiles for collection by persons visiting the Show later, but may be posted at the Post Office in Main Avenue.

Catering – It is regretted that it is not possible to provide set luncheons and teas, but buffets for the service of light refreshments will be available. There will also be separate enclosures for the service of alcoholic beverages.

Post Office & Telephones – A Post Office for the transaction of ordinary Post Office business will be found in Main Avenue, as will also several Public Telephone Boxes.

Railway Inquiries – British Railways have an inquiry bureau in the Show, situated in Main Avenue.

Band – The Band of H.M. Grenadier Guards will, by courtesy of the Officer Commanding, play each afternoon in the Ranelagh Gardens, where chairs are provided.

Cloakroom – A cloakroom at which bags, parcels, etc., may be deposited will be situated in Main Avenue.

Catalogue – An official Catalogue of the Show will be on sale in the Grounds, price 1*s.* 6*d.*

Bath Chairs – The arrangements for the admission of bath chairs will be as follows:

On Tuesday, May 26, Fellows and Associates in bath chairs will be admitted between 8.30 A.M. and 8 P.M. on presentation of tickets for the Private View. There will be a charge of 5*s.* for each chair, and that charge will cover one attendant.

On Wednesday, May 27, bath chairs will be admitted only between 8.30 A.M. and 12 NOON on presentation of Fellows' or Associates' tickets, or on payment of £1 for the occupant of the chair. There will also be a charge of 5*s.* for the chair, and that charge will cover one attendant.

On Thursday, May 28, bath chairs will be admitted only between 8.30 A.M. and 12 NOON on presentation of Fellows' or Associates' tickets, or on payment of 10*s.* for the occupant of the chair. There will also be a charge of 5*s.* for the chair, and that charge will cover one attendant.

On Friday, May 29, bath chairs will be admitted only between 8.30 A.M. and 12 NOON on presentation of Fellows' or Associates' tickets, or on payment of 5*s.* for the occupant of the chair. There will also be a charge of 5*s.* for the chair, and that charge will cover one attendant.

The Society cannot arrange for the provision of bath chairs, but they may be hired from Messrs. Reselco Invalid Carriages Ltd., 262 King Street, London, W.6. Chair attendants cannot be supplied.

TRANSPORT

Visitors travelling by car, taxi or coach should alight at the Embankment entrance. Visitors travelling to London will find the following Railway and Bus Services of London Transport operating from the Main Line Termini:

CANNON STREET (*Railway*). District Line direct to Sloane Square. (*Bus*) Number 13 to Charing Cross, thence by Number 11 to Lower Sloane Street, Pimlico Road.

CHARING CROSS (*Railway*). District Line direct to Sloane Square. (*Bus*) Number 11 to Lower Sloane Street, Pimlico Road.

EUSTON (*Railway*). Northern Line to Charing Cross, thence by District Line to Sloane Square. (*Bus*) Number 77 to Whitehall, thence by Number 11 or 39 to Lower Sloane Street, Pimlico Road.

FENCHURCH STREET (*Railway*). Tower Hill direct to Sloane Square. (*Bus*) Number 10 to Victoria, thence by Number 11, 39 or 46 to Lower Sloane Street, Pimlico Road.

KING'S CROSS AND ST. PANCRAS (*Railway*). Piccadilly Line from King's Cross and St. Pancras to Leicester Square, thence by Northern Line to Charing Cross, thence by District Line to Sloane Square. Or Circle Line direct to Sloane Square. (*Bus*) Number 77A to Whitehall, thence by Number 11 or 39 to Lower Sloane Street, Pimlico Road.

LIVERPOOL STREET (*Railway*). By Circle Line direct to Sloane Square. (*Bus*) Number 11 to Lower Sloane Street, Pimlico Road.

LONDON BRIDGE (*Railway*). Northern Line to Bank, thence by District Line from Monument to Sloane Square. (*Bus*) Number 10 to Victoria, thence by Number 11, 39, or 46 to Lower Sloane Street, Pimlico Road.

MARYLEBONE (*Railway*). Bakerloo Line to Paddington, thence by Circle Line to Sloane Square. (*Bus*) Number 2, 30 or 74 from Baker Street to Marble Arch, Park Lane, thence by Number 137 to Chelsea Bridge Road, Royal Hospital Road.

PADDINGTON (*Railway*). Circle Line direct to Sloane Square. (*Bus*) Number 36 or 36A to Marble Arch, Park Lane, thence by Number 137 to Chelsea Bridge Road, Royal Hospital Road.

VICTORIA (*Railway*). District Line direct to Sloane Square. (*Bus*) Number 11, 39 or 46 to Lower Sloane Street, Pimlico Road.

WATERLOO (*Railway*). Northern or Bakerloo Line to Charing Cross, thence by District Line to Sloane Square. (*Bus*) Number 46 to Lower Sloane Street, Pimlico Road.

BAKER STREET (*Railway*). Circle Line direct to Sloane Square. (*Bus*) Number 2, 30 ot 74 to Marble Arch, Park Lane, thence by Number 137 to Chelsea Bridge Road, Royal Hospital Road.

A plan giving approach routes to the Show and parking places may be obtained on application to The Secretary.

NOTES FROM WISLEY

N. K. Gould

IN a garden as large and diversely planted as Wisley there is something of interest to be seen at any time of the year and many Fellows whose homes are near the Gardens make a point of coming frequently and regularly, even in the depth of winter.

For those less conveniently placed it becomes necessary to choose dates when there will be some feature of special interest, and we can suggest no time more appropriate for a visit than mid-May. At this time the deciduous trees in and around the Gardens are coming into young leaf and add very greatly to one's enjoyment of the visit, and the whole place is gay with masses of flowers of many kinds. On entering the gate one immediately gets a view of the terrace which, this year, is bedded with tulips underplanted with polyanthus in a variety of colours. The latter begin to come into flower in mid-March and so considerably extend the period during which the beds are attractive. During the past few years tulips have been used alone in the beds and, although when in flower they are extremely spectacular, their season is necessarily short, and this method of planting has the added disadvantage that if any of the plants are spoilt by disease unsightly gaps are formed.

From the terrace the visitor is advised to turn left between the herbaceous borders and proceed to Battleston Hill. On the way several bushes of the lilac named 'Primrose' will be seen in flower; this is quite distinct and can be highly recommended. There is no other variety quite like it and it is extremely effective planted with a dark purple variety such as 'Souvenir de Louis Späth'.

On crossing the service road near the top end of the borders one reaches Battleston Hill, where the evergreen azaleas on the right-hand side will be in full flower during the month. In this section they are all hybrids of the dwarf-growing evergreen species, such as *Rhododendron obtusum*, and they are among the best plants for small gardens where the soil is rather on the acid side. Although not rampant growers they soon spread into compact bushes, covering themselves with flowers each year and retaining much of their foliage through winters of ordinary severity. All they ask in return is a generous annual top-dressing of leaf-mould or, if this cannot be provided, copious watering in very dry weather.

On the other side of the broad walk, there is the section devoted to the trial of hardy hybrid rhododendrons, sometimes known as "Nurserymen's hybrids". The visitor may be rather surprised to see that this collection includes some of recent introduction but also some which have been grown for very many years. The less meritorious of the older ones have from time to time been discarded but the best, for example

'Mrs. Furnival', are practically indispensable. This particular variety and some others of its contemporaries, form with the passage of time large symmetrical and compact bushes with good foliage and with a flower truss at the tip of almost every growth. They are therefore still extremely valuable plants although old and well known.

Higher up the slope are several beds filled with large-flowered deciduous azaleas. Many of these are new and un-named seedlings raised at Wisley. Many more of the same type are to be found on the south slope of Battleston Hill. Some other attractions in this part of the Garden will be magnolias, including *M. wilsonii* and *M. sinensis*, both with pendent white flowers; *Davidia involucrata*, the Handkerchief Tree, in which a small cluster of inconspicuous flowers is enclosed within a pair of white, crinkled bracts hanging downwards from the stalk; *Halesia monticola*, a species of Snowdrop Tree, of more upright growth than the rather shrub-like *H. carolina* with larger flowers hanging in bunches of four or five together.

On Weather Hill will be found many different ornamental trees among which the later varieties of Japanese Cherry will still be good. 'Shirofugen' is perhaps one of the most lovely of these; the large frilly flowers are, at first, pale pink becoming white and, as the petals fall, again display some colour. They hang on very long peduncles from the branches where pale copper-tinted leaves are beginning to expand.

A late-flowering cherry of very different appearance is *Prunus cerasus* var. *rhexii*, which displays a succession of very regular double, white flowers on its slender branchlets. Near this is a group of laburnums, including a specimen of the remarkable graft-hybrid known as Adam's laburnum, which arose, accidentally, after a Parisian gardener had grafted a scion of the purple *Cystisus purpureus* on a stock of common laburnum. Its flowers of a curious brownish-pink colour always excite interest and occasionally a shoot bearing the true flowers of one or the other of the component species may be seen to arise.

In the wild garden will be found a large number of flowering shrubs which delight in the lime-free soil of that area. Among the most conspicuous at present are the varieties of *Enkianthus*, a genus of the heather family with very slender elegantly branched stems now clothed with pale green leaves and sprays of drooping bell-shaped flowers, either white as in *E. perulatus*, creamy-white variably striped with red as in *E. campanulatus*, or glowing ruby-red as in *E. cernuus* var. *rubens*. In the same family are *Menziesia* and *Zenobia*, as notable for the beauty of the individual flower as for their massed effect. *Gaultheria shallon* and *Pernettya mucronata* must have been among the first shrubs planted in the wild garden long before the Society came to Wisley and they can be seen in some very old photographs of this part. Consequently, there are many colonies of the two species, and a hybrid, named *Gaulthettya wisleyensis*, appeared spontaneously as a result of a cross between the two. This is an attractive plant, compact in habit with neat dark,

evergreen foliage, numerous small white flowers and reddish-purple berries.

Of the smaller herbaceous plants in the wild garden, we may mention several species of *Erythronium*, which have pale green basal leaves often prettily mottled with bronze and either yellow, white or pink lily-like flowers. Trilliums are easily recognizable by their white or pink three-petalled flowers supported by three large green leaves beneath each. *Shortia galacifolia* has been established in various parts for very many years and flowers very freely every spring. More recently, the larger-flowered *S. uniflora* var. *grandiflora* has been planted in several places and does equally well. Epimediums are extremely useful shrubs to use as ground cover in somewhat shaded places, where they form spreading patches of evergreen glossy leaves of great beauty and also produce in the spring very delicate sprays of variously coloured blossoms. Lilies-of-the-valley are to be found under the shrubs in every part of the wild garden and among them will be found several very distinct varieties, including the so-called pink ones which are actually of a rather pale purplish tint, and a so-called double variety in which the inflorescences branch into sprays of proliferous blooms.

Unless the weather during April has been very cold, the lilacs should be well in flower by the second week in May and will last in good condition for at least a fortnight. There are some very good varieties to be seen in Howard's Field and others in Seven Acres. The recent alterations in Howard's Field were described in our earlier notes and the effect of the clearance of some of the more over-crowded parts will be evident during the present season. Lilacs are not by any means the only plants of interest in this rather remote part of the garden; there are in addition some very interesting trees of maple, crabs and species of *Prunus*. Those who have visited Howard's Field should walk back along the riverside path through the Pinetum, where the turf is dappled with bluebells and other naturalized bulbs. At this time of the year, when tipped with bright young growth, many find the evergreen conifers among the most lovely of trees.

CHARITY COMMISSION

IN the matter of the Charity called "The Lindley Library Trust" the Charity Commissioners for England and Wales hereby give notice that an Order has been made by them establishing a Scheme in the matter of the Charity.

Copies of the Order and Scheme can be seen between the hours of 10 A.M. and 4 P.M. (Saturdays 10 A.M. and 12 NOON) at the Lindley Library, 80 Vincent Square, S.W.1, and at the Commissioners' Office at 14 Ryder Street, St. James's, London, S.W.1, where copies can be purchased at the price of 6*d.* each.

FRANK KINGDON-WARD,

O.B.E., M.A., F.L.S., V.M.H.

1885–1958

FRANK KINGDON-WARD has very rightly been described as the doyen of plant collectors. He devoted his whole life to plant collecting and to travel in the Sino-Himalayan regions. For nearly fifty years he was in the field with only short breaks for refitting and reorganizing between expeditions. Probably no other plant collector has ever given himself up to his chosen pursuit for a longer time or so completely. He was also unusually successful, which indeed he well deserved to be, since he was most careful and painstaking as well as persistent in reaching the areas he wanted. There can hardly be a garden of distinction in this country that does not have some KINGDON-WARD plants. Rhododendrons, primulas, meconopsis, lilies and gentians were perhaps the genera in which he was most interested and these formed a large part of the flora of the regions in which he travelled, but he also made valuable introductions among many other trees and shrubs such as magnolia, viburnum, cotoneaster and berberis.

Even in his earlier days the planning of his expeditions was beset with political difficulties, for the region has long been unsettled, but these were not as great then as they are today. It is indeed sad that practically all this area, particularly Tibet and Western China, is now closed to European collectors.

From his earliest days WARD nearly always travelled alone, apart from native carriers. He did not, however, follow the system of some other plant collectors, such as GEORGE FORREST, of increasing the area covered by employing native collectors to bring in specimens and seeds. He liked to see each plant himself, in many cases to mark it individually and then to return in the autumn to collect the seed. In consequence his field notes were unusually full. After each of his main expeditions between the Wars they were published in little booklets by the sponsors of the Expedition and are still well worth study. In some cases important introductions were made from a single plant in seed, such as *Rhododendron imperator* and *R. pemakoense* and perhaps he did not see his plant in flower until he visited the gardens of the sponsor of his expedition, or one of the great Botanic Gardens, some years later. However, there was probably among his seeds, a very small proportion of plants without potential horticultural value.

He had great courage and persistence. Even on his seventy-first birthday he celebrated the event by climbing to 10,000 feet. A few years earlier, one day he was delirious with a severe throat infection but thirty-six hours later he was climbing up a track so steep and difficult that most of the way handholds were as necessary as footholds.

All his life he had an aversion to the frail-looking and apparently precarious bridges that are frequently found in the Himalayan valleys, but he always conquered this when in quest of a plant. The long retreat down the shattered Lohit valley in 1950 after the devastating experience of the earthquake, which he described so vividly in *Nature*, was a very special feat of courage on his part since he and his wife had to meet and pass often several times daily and for weeks on end the kind of "airy" passages and positions which he so much disliked.

KINGDON-WARD was born in 1885, the son of HARRY MARSHALL WARD, F.R.S., Professor of Botany at Cambridge. Thus an interest in botany was an early part of the life around him and naturally stimulated him. Prior to moving to Cambridge his father had been Professor of Botany at the Royal Indian Engineering College at Cooper's Hill and his young son would be likely to have come into touch with forest officers and botanists returning from India and Burma and probably heard tales of the great forests, rivers and mountains of the Himalaya.

In 1904 he went up to Cambridge with an entrance scholarship in Natural Sciences and took Honours in his tripos in 1906. In 1907 he was offered a job as schoolmaster in Shanghai and accepted it, thus starting his life in Asia. His first expedition was not, however, till 1909–10, when he joined the late MALCOLM ANDERSON in a journey to Western China. His main career as a plant collector, however, began in 1911, when he was engaged by MR. A. K. BULLEY, who owned Bees Ltd., the nursery firm of Liverpool, to make an expedition for plants to North-Western Yunnan. He records in the first paragraph of *The Land of the Blue Poppy*, the first and one of the best of his travel books, how he returned to Shanghai in 1910 expecting to settle down but in vain, "travel had bitten too deeply into my soul and I soon began to feel restless again, so that when after four months of civilized life something better turned up, I accepted with alacrity". It was BULLEY who had also engaged GEORGE FORREST for his first expedition seven years before. BULLEY was, however, chiefly interested in alpine and herbaceous plants and it was only on later expeditions that WARD was able to develop his intense interest in the genus *Rhododendron*.

One of the finest species, *R. wardii*, was first collected by him on his 1913 expedition to Northern Yunnan and the Tibetan frontier provinces and subsequently named after him. With its pale lemon-yellow saucer-shaped flowers and orange flushed buds (Fig. 67) it is one of the most beautiful members of the genus and is hardy throughout this country, while as a parent it has given good character to very many distinguished hybrids. His other great rhododendron introduction *R. macabeanum* was not collected until a visit to Manipur in 1927. This promises to be the finest of all the large-leaved rhododendrons for the majority of gardens both in respect of hardiness as well as in flower, foliage and young growth, which is the smoothest suède grey (Figs. 67 and 68). He also introduced the best flowering form of *R. forrestii* var. *repens*.

WARD was fortunate in that he started his collecting career during

one of the great periods of English gardening, when the more formal gardening was giving place to a much greater interest in the individual plant and when the garden was being spread into the wilder woodland. The plants from Sino-Himalaya were excellent for this and perhaps stimulated a more natural form of planting. In return, the greater knowledge of these areas stimulated a greater wish for more plants and there were fortunately at this time a number of keen and very knowledgeable gardeners with the resources to sponsor plant collecting expeditions, among them the late LORD ABERCONWAY, LIONEL DE ROTHSCHILD of Exbury, J. B. STEVENSON of Tower Court, SIR FREDERICK STERN of Highdown, COL. STEPHENSON CLARKE of Borde Hill, COL. LEONARD MESSEL of Nymans and J. C. WILLIAMS of Caerhayes. The gardens which they made have now come to a period of fruition and magnificence, of which we may never see the like again.

Yunnan and the Western Chinese provinces were, however, being covered thoroughly by other collectors, such as GEORGE FORREST and DR. J. F. ROCK. In consequence, WARD turned more westwards to South-Eastern Tibet, the frontier regions between North Burma, China and Assam and to North Burma and Assam. Probably he had a greater knowledge, both botanical and geographical, of these mountains than anyone else living. These were thinly populated or, in some cases, entirely unpopulated regions. Since a list of his expeditions is given after this notice it is unnecessary to recapitulate them all here. In 1913 and in 1914 he was back again on the China–Tibetan–Northern Burma border and again in 1919, after the War. This is an area of tremendously high rainfall, thick forest and alpine regions, where dwarf rhododendrons take the place of heathers in thick matted scrub. Curiously it is also a region of few animals and birds and WARD often commented on the stillness. Many of the plants have proved difficult of cultivation in this country, particularly in the south, lacking the long winter rest under snow and the very high humidity of the monsoon periods. It is far wetter in these mountains than in Yunnan and Szechwan, and even than in most of Tibet.

Possibly the 1924 expedition was WARD's greatest, when he started from Sikkim and explored along the southern boundary of Tibet, then along the course of the Tsangpo, through the great gorges and, finally, down to Rangiya, near the frontier of Bhutan and India. On this expedition he was able to confirm for the first time that the Tsangpo, which flows from west to east in Tibet, crosses the eastern Himalayas and does so without any very outstanding fall of water. Although not very high in altitude, plants from this gorge have done well in English gardens and proved hardy.

Of his plants the number is so great that it is impossible to discuss them in detail, or even a good proportion of them. Perhaps the achievement most commonly associated with his name is the introduction of COLONEL BAILEY's Blue Poppy *Meconopsis betonicifolia*, a plant of singular beauty which has become so well established as to find its way into

most seed catalogues each year and in countries so widely apart as New Zealand, Canada and those of Scandinavia. This he collected several times, but the first introduction came from near Tumbatse in South-Eastern Tibet, under number K.W. 5784, where he remarks "among a paradise of primulas the flowers flutter out from amongst the sea-green leaves like blue and gold butterfles". He also first introduced *M. violacea* and several times collected the apparently equally beautiful *M. speciosa*, but unfortunately we have not been able to keep it in cultivation.

Among primulas, of which he collected a very large number, perhaps the best known is *P. florindae*, named after his first wife. It is not only the largest but also one of the most adaptable of the bog-loving candelabra section. He also introduced *P. bulleyana*, *P. chungensis*, *P. concholoba* and *P. normaniana*.

Among rhododendrons we have already mentioned *R. wardii* and *R. macabeanum*, but he introduced also *R. elliottii*, *R. imperator*, *R. patulum*, *R. cephalanthum* var. *crebreflorum* and *R. leucaspis* and many good forms of other species already known. His lilies are particularly notable and interesting and include *L. wardii*, a very fine martagon-type pinkish-purple lily with a stoloniferous stem at the base (Fig. 62), *L. mackliniae*, named after his second wife, JEAN MACKLIN, who accompanied him on his later expeditions, and *L. arboricola*, the interesting epiphytic lily with Nile-green flowers which flowered once in this country, but unfortunately appears to have died out again. He also saw, and in most cases collected, further stock of *L. nepalense*, *L. primulinum*, *L. bakerianum*, *L. nanum*, *L. souliei*, as well as *Nomocharis saluenensis*, a white *N. pardanthina*, which, alas, seems lost today, and *N. farreri*. Among his gentians, perhaps *G. gilvostriata* was the most exciting and beautiful, but unfortunately it has not proved an easy plant in this country and is now very rare.

Among berried shrubs there are two particularly fine introductions in *Cotoneaster*, *C. conspicuus* and *C. franchetti* var. *sternianus*, the latter being usually found in gardens under the name *C. wardii*, which name should really belong to a different plant. These are both plants suitable for all gardens.

His superb Carmine Cherry, *Prunus cerasoides* var. *rubea*, was collected in 1931 in Northern Burma and introduced from his seed, although trees of it had been recorded before by other collectors. The large tree in SIR FREDERICK STERN's garden at Highdown flowered for the first time in 1938 and has done so since quite regularly. It has, however, proved tender in other less sheltered positions.

The number of new species found by WARD was considerable. He records that in 1939, on his third visit to the Hpimaw Hills of Northern Burma, he found fifty new species out of 500 species collected. He adds with characteristic generosity that any trained collector avoiding his exact routes might do the same again. Some of his introductions have yet to show their full worth but are growing in a number of gardens.

They include a sulphur-yellow *Cornus*, of which he thought very highly, probably *C. chinensis*. It is allied to *Cornus mas*. An unusually fine *Sorbus*, K.W. 17219 from Manipur, and allied to *S. harrowiana*, has still to show us its full magnificence, described by its collector in a burst of enthusiasm as "one of the most beautiful forest trees imaginable".

KINGDON-WARD was a prolific writer. His style was careful and painstaking but he managed to convey to us something of the excitement and floral wonder of the great forests and high mountains. But for a gardener he never told us quite enough and one always wished for just a little more. Perhaps that was due in part to the natural modesty of this short, wiry man with the ready smile but distant look in his eyes. On his return from an expedition he would mingle quietly with the crowds at Vincent Square or Chelsea and greet his many friends. For him there was always yet another expedition to be considered. Only a few days before he died, very suddenly, he had been discussing plans for other expeditions. His visits to this country were only unavoidable interludes in a life among the mountains, although unfortunately, owing to the many restrictions of modern travel in these regions the interludes had tended to become longer of late, and to fill in the intervals he worked as a part-time botanist in the Herbarium of the British Museum (Natural History), where there were so many of his specimens to be identified and laid into the National Collections.

During these times he must have been much sustained by his second wife, who shared his enthusiasm for the wild, and constantly encouraged him to hope that they would soon be able to leave again. In his last expeditions, when the higher mountains were closed to him, he tended to visit relatively lower areas and the plants were more suitable for the warmer parts of Northern America than for English gardens, and from there he found his later sponsors. At the end of the 1939–45 War he also returned to the mountains with the mission of finding American aircraft which had crashed while flying into China, and trying to trace the graves of the crew, but even then he found time to collect a few plants.

In spite of the enormous and widespread interest in horticulture today it seems doubtful if this generation will see again any whole-time professional plant collectors of his capabilities and experience. But probably there is much more to be collected.

KINGDON-WARD was awarded the Founders' Gold Medal of The Royal Geographical Society in 1930, their highest award, the Victoria Medal of Honour by this Society in 1932, the Livingstone Gold Medal for explorations by The Royal Scottish Geographical Society in 1936, while in 1957 he was installed as an Honorary Freeman of the Worshipful Company of Gardeners. He was awarded the O.B.E. in 1952.

Finally, we would like to quote the concluding sentences from a chapter on rhododendron collecting which he wrote for MRS. BERYL URQUHART's book, *The Rhododendron*, only a short time before his death.

"Rhododendrons in the wild, lashed by the mountain gales, caressed

by the sun or stung by the driven rain, in winter buried under 10 or 20 feet of snow, are unforgettable. Man can assemble in close embrace a far greater range of rhododendrons than nature ever knew; but never can he reproduce the drama of living plants on the high and lonely passes of Sino-Himalaya."

THE PLANT-COLLECTING EXPEDITIONS OF F. KINGDON-WARD

1909–10 Western China with MR. MALCOLM P. ANDERSON.

1911–12 Western China, Yunnan and S.E. Tibet, including valleys of Upper Mekong, Salween and Yangtze.
Described in *The Land of the Blue Poppy*.

1913–14 N. Yunnan and Tibetan frontiers, including Chungtien plateau, valleys of Upper Yangtze, Mekong and Salween, Ka-Kar-po range and Pai-ma-shan range.
Described in *The Mystery Rivers of Tibet*.

1914 N.E. Upper Burma, including Hpimaw, Imaw Bum, Wulaw pass and valley of 'Nmai Hka.'
Described in *In Farthest Burma*.

1919 N.E. Upper Burma.
Partly described in *The Romance of Plant Hunting*.

1921 N.E. Yunnan, Yunnan-Szechwan borders, including Muli.

1922 Yunnan, Szechwan, S.E. Tibet and N.E. Burma, including Lukiang, Tali and Muli, Yangtze-Mekong divide, valleys of Mekong, Salween and Taron, Hkamti Long.
Described in *From China to Hkamti Long* and in part in *The Romance of Plant Hunting*.

1924–25 With LORD CAWDOR.
Tibet and Bhutan. From Sikkim through S. Tibet to the upper Tsangpo valley and gorges.
Described in *The Riddle of the Tsangpo Gorges*.

1926 Upper Burma and Assam. Seinghku, Di Chu and Lohit valleys, Mishmi hills.
Described in *Plant Hunting on the Edge of the World*.

1927–28 With MR. H. M. CLUTTERBUCK.
Assam and Mishmi hills. Japvo, Naga hills, Delei valley.
Described in *Plant Hunting on the Edge of the World*.

1931 N.E. Upper Burma and Tibetan frontier, including Adung valley.

1933 In earlier part with MR. RONALD KAULBACK and MR. BROOKS CARRINGTON.
Assam, S. Tibet and Upper Burma, including Lohit and Rong To valleys, Zayul, Shugden Gompa, Upper Salween, Nagong and Delei valleys, Mishmi hills.
Described in *A Plant Hunter in Tibet* and in part by RONALD KAULBACK in *Tibetan Trek*.

1935	S.E. Tibet. Assam-Himalaya frontier tract, including Saramati peak, Naga hills, Balipara frontier track, Se La, Tsari, Mönyul, Karta, Chayul. Upper Tsangpo and Tsari valleys, gorge of Yigrong. Described in *Assam Adventure*.
1937	N.E. Upper Burma and S.E. Tibet, including Nam Tamai and Adung valleys, Ka Karpo Razi. Described in *Burma's Icy Mountains*.
1938–39	Assam Himalaya and N. Burma with Vernay-Cutting Expedition, including Manda La, Dirang Dzong, Tembang, Poshing La, Orka La, Manda La, Phutang, Rupa, Lagam, Senge Dzong and Ze La. Described in *Burma's Icy Mountains*.
1946	Assam, Khasi and Jainta hills.
1948	With DR. S. K. MUKERJEE and MRS. JEAN KINGDON-WARD. Assam, East Manipur, Ukhrul and Sirhoi. Described in *Plant Hunter in Manipur*.
1949	Assam including Mishmi, Khasi and Naga hills.
1950	With MRS. JEAN KINGDON-WARD. Assam–Tibet frontier. Lohit valley. Described in *My Hill so Strong*, by JEAN KINGDON-WARD.
1953	With MRS. JEAN KINGDON-WARD and two Burmese botanists, U. THA HLA and U. CHIT KO KO. N. Burma. The triangle between the Eastern (Nmai Hka) and Western (Mali Hka) branches of the Irrawaddy, including Tama Bum and Tagulam Bum. Described in *Return to the Irrawaddy*.
1956	With MRS. JEAN KINGDON-WARD and two Burmese botanists, U. MAUNG GALE and U. CHIT KO KO. West Central Burma, Chin Hills including Mt. Victoria.

LORD STRATHCONA AND HIS GARDEN ON THE ISLAND OF COLONSAY

THE Gardening World sustained a great loss when LORD STRATHCONA died on Sunday, February 22, 1959—for among his many interests gardening was high on his list. Indeed, he used to say he was never so happy as when he was working in his garden. He favoured shrubland planting best of all, and introduced into his Island of Colonsay, off the West Coast of Argyllshire, many fine specimen trees and shrubs; he was particularly keen on the genus *Rhododendron*, of which he collected a remarkable assortment of fine forms of the species, and a great variety of the best hybrids.

Both species and hybrids were planted in groups to form great

masses of strong colour, and for later effects he had not only *R. griersonianum* but many of its brilliant hybrids, such as 'Tally Ho', 'May Day', 'Vanessa', 'Fabia', 'Azor' and many others.

In 1938 he planted up a small valley consisting of the large-leaved rhododendrons, such as *sinogrande*, *macabeanum* and practically all of the *Falconeri* series; some of these plants are now well over 17 feet high, by as much through.

His latest planting, which he was keen to complete, were all the low-carpeting types such as the *Lapponicum* and *Campylogynum* series, *forrestii*, *Saluenense* series—also some of the Wilson 50 Kurume azaleas and Yokohama Nurseries Kurume azaleas.

With all the difficulties of living on an island, where wind, sea, climatic conditions prevailed, the transporting of large plants from the mainland by sea, never dampened his ardour to continue and create further beauty; he was extremely patient and very understanding of plant behaviour, and because of these two golden points he became well rewarded in so short a time—for it is no mean feat to produce a Show garden from scratch, only beginning in 1930, a matter of twenty-nine years.

LORD STRATHCONA had an eye for form and was a first-class judge. Although very reticent, he knew very much more than he led one to believe.

R. M. STEVENSON

THE PRODUCTION OF STRAWBERRIES FROM ONE-YEAR-OLD PLANTS

Beatrix Havergal, N.D.H.

(*Lecture given on October* 7, 1958, DR. H. V. TAYLOR, C.B.E., V.M.H., *in the Chair*)

MY objective today is to cover one aspect of strawberry-growing—the production of strawberries from one-year-old plants, and to show how it is possible (at Waterperry, at any rate!) to pick a good crop from the middle of April until early July, relying on one variety only; the variety, in our case, is 'Royal Sovercign'.

For some years we have been growing this variety in complete isolation from all other varieties for the express purpose of keeping our stock free from virus diseases. 'Royal Sovereign', introduced by Messrs. Laxton in 1892, is a well-known and extremely popular variety with a real flavour, a lovely scent and a most attractive colour, and it is particularly valuable for early work under glass.

Before the war, we grew several of the popular varieties of that time, and by careful choice of early, mid-season and late ones, we were able to prolong the picking season. Then trouble came!

Not realizing how susceptible 'Royal Sovereign' is to virus, and that 'Tardive de Leopold'—a useful late variety—is a carrier of virus, we planted them alongside each other for pollination purposes. 'Tardive' being unable to pollinate its own flowers, is dependent upon another variety, and at that time 'Sovereign' was particularly recommended for the purpose. About two years later we heard that 'Tardive' was a carrier of virus and should never be grown alongside 'Sovereign'. I shall never forget that day! An instant choice had to be made, and realizing the sterling qualities of 'Royal Sovereign', and being interested in its survival, we decided to throw out 'Tardive' and to concentrate on the one variety only and to try to preserve it free from troubles.

From this story you will see that it is perhaps unwise to mix varieties without thought, particularly if any are as susceptible to disease as 'Royal Sovereign', but now that virus-free stocks are available, varieties may perhaps grow together quite happily, provided the strawberry aphid is kept under control.

In 1941, we began runner production in earnest under the Ministry of Agriculture's Certification Scheme, and with the original M.40 strain from East Malling Research Station.

Nothing was really effective against the strawberry aphid in those days, and after five years of ineffective control, gassing with nicotine fumes and spraying with nicotine essence, the stock became seriously affected by the "crinkle" virus and had to be destroyed. In 1946, we were fortunate in getting a few plants of an improved strain of M.40 from East Malling Research Station, and from these we built up our present stock.

With this new hope came more drastic measures against that principal carrier of virus diseases, the strawberry aphid, and each year we have sprayed the runner beds regularly once a month from May to September with a systemic insecticide as the most effective way of counteracting that most serious pest. Good husbandry, careful "rogueing" of inferior plants, and propagating only from de-blossomed one-year parents, are also contributory factors to the present health of our stock.

I would like here to pay special tribute to the work that East Malling Research Station is doing in the provision of virus-free stocks. Without their work I very much doubt whether 'Royal Sovereign' would still be available for people to grow.

With this brief introduction to our stock I now turn to the production of fruit. Relying on the one variety only, meant a very short fruiting period, and we set out to prolong this by using a heated glasshouse, some cloches and an open-ground bed—three definite places for growing three definite batches of plants:

THE FIRST BATCH, for the glasshouse for fruiting from mid-April to mid-May, with the assistance of a little heat.

THE SECOND BATCH, for growing in the open ground and covering later with cloches, for fruiting from mid-May to mid-June.

THE THIRD BATCH, for the open-ground bed for fruiting from the middle of June to early July.

To do all this successfully, it is important to have a supply of pot-runners for use at the end of July or early August. To obtain these we go to the runner-bed at the end of June or early July. This bed was planted the previous September or October, and to strengthen the plants and ensure a supply of strong early runners, the parent plants are de-blossomed in spring, and by the end of June several well-developed runners from each plant are ready for pot-layering.

Having filled 3-inch pots with the John Innes Potting Mixture No. 1, to simplify watering, the pots are plunged into the ground in groups near the parents, and the plantlets are pegged singly into the pots with a wire "hair-pin" made from old baling wire. They are kept well-watered for three weeks and are then severed from their parents and moved to an ash bed in full sun where they learn to stand alone for a week. They are then ready for potting or planting out. While together on the ash bed they are easily sprayed with a systemic insecticide against aphids, and also with Karathane as a preventive against the mildew fungus. The plants must never be allowed to suffer from want of water during this resting week, or, in fact, at any time.

It will always pay to set aside a few young plants each year for runner production only, rather than to propagate from a fruiting bed, provided, of course, that the stock is strong and healthy.

It is now about August 1st and four weeks have elapsed since the layering process; the plants should now be well-rooted but not seriously pot-bound, and are grouped into three batches for immediate attention. I would now like to deal with the first batch for the greenhouse:

GREENHOUSE PLANTS

From the 3-inch pots the plants are potted firmly into 6¼-inch pots in the John Innes Potting Mixture No. 2 and returned to an ash bed in full sun. After moderate watering to begin with, they should never be allowed to become dry. It is important to spray them with a systemic insecticide against aphids in September. About the middle of November the plants are usually saturated, all growth has ceased and the foliage is flat on the pots. It is a good plan to lay them on their sides against a wall and pack straw well round the pots to prevent breakage through frost. This is far better than standing them in cold frames; they will dry gradually and the cold weather is good for the crowns. At the end of December, house the plants in a light airy house, choosing a high shelf near the glass as an ideal position. They require no heat for the first two weeks and should be watered only if really dry. When the young green leaves stand erect and the plants are "beginning to take notice", the temperature of the house should gradually rise with growth from a night temperature of 45° to begin with, to 60° when in full flower in the middle of March. A high night temperature before the flower-buds appear will induce foliage at the

expense of flowers, and careful watering is necessary until young foliage is well-developed. A sunny blossom-time in the middle of March is a great joy, and to ensure good pollination and perfect fruit, the largest flowers should be pollinated with a rabbit's tail each day. As many as forty flowers arise on each plant but as soon as the petals drop from the eight to twelve largest flowers, all smaller flowers should be cut away. This thinning ensures quick development and larger fruit. Careful ventilation, maintaining a warm, buoyant and somewhat dry atmosphere, with a night temperature of 60° throughout blossom time, will greatly assist in the quick development of fruitlets. Careful watering is important, giving less while in flower but an abundance when the fruits are swelling. By reducing ventilation and keeping the house warm and close, maintaining a thoroughly moist atmosphere, by syringing the plants and damping the floor, and by running the night temperature up to 65°, the fruitlets will swell visibly.

As soon as colouring shows, it is wise to allow the fruit to ripen slowly by reducing the temperature, admitting more air and maintaining dryer conditions. Far larger fruit is obtained by a slow ripening period.

To maintain healthy foliage, the plants should be fed from the beginning of the flowering period until ripening begins, using any well-balanced liquid food.

It is a good plan to fumigate the house once a month to keep down aphids, and if mildew is likely to be troublesome the plants should be sprayed before and after flowering with a suitable fungicide.*

It is difficult to express the excitement and joy that is felt in the middle of April when the fruits are ripe and ready to pick; the glowing colour and the wonderful scent of the fruit, not to mention the taste, fills one with a real sense of achievement!

Now may I turn to the second and third batches of young pot-runners for fruiting under cloches and in the open ground.

CLOCHED PLANTS

Following our plan of arrangement, the two batches are grown side by side on a piece of ground prepared in a similar manner for both batches. These follow a crop of early cauliflower, which are planted in March or April and cleared in time for the early August planting of these strawberries. Before planting the cauliflower, the piece of ground is winter-dug a good spade's depth, and a generous dressing of partially decayed farmyard manure is added at the rate of one good barrow-load to six square yards, or 50 to 60 tons per acre. After clearing the cauliflower at the end of July, a Rototiller or fork should make a good tilth to the depth of 6 inches, which provides the easy rooting conditions that strawberries like. The bed is now ready for planting.

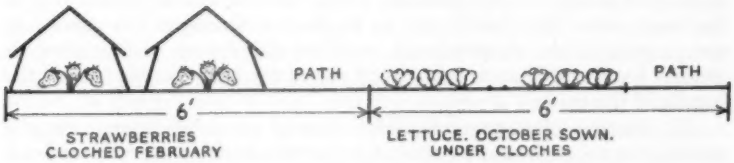
Choosing a day when the soil is not too wet, the bed should be made firm but not solid; heavy trampling or rolling is a mistake. The

* See reference to mildew on p. 222.

bed now has to be arranged to suit both cloche and open-ground plants.

After trying out different kinds, we prefer Growers' Barn cloches, 2 feet × 2 feet, with 9-inch sides. By giving the plants room and growing them in an uncrowded state, the colour and quality of the fruit is much better, and it ripens considerably earlier. Using a strip of ground, 6 feet wide and any length, two lines of cloches are arranged, with a 4-inch space between the lines for watering purposes, and a 20-inch path alongside. This makes a satisfactory unit. To utilize the cloches before they are required for covering the strawberry plants, an additional 6-inch strip of ground can be provided alongside, arranged in like manner, and a crop of lettuce ('Attractie') can be sown early in October, covered with the cloches immediately, and these take care of themselves quite well when the cloches have to be moved on to the strawberries early in February.

The spacing of the strawberry plants under cloches is a matter of opinion and must depend upon soil conditions and, most of all, the



time of planting and the variety used. It is a great mistake ever to overcrowd plants in the close proximity of cloches. 'Royal Sovereign' requires more room than varieties producing less foliage, particularly if planted early in August. Planting a single row down the centre of the cloche, with 1 foot between the plants, ultimately gives a continuous line of fruit and the foliage is up in the apex of the cloche.

It is well known that by planting early there is a risk of more foliage, and the plants grow much larger, particularly if the plants have been overfed with nitrogen in the spring, and also the ripening period may be delayed. Nevertheless, by careful arrangement the resulting crop is far greater and the quality better than that obtained from late-September or October-planted runners. The crop has to be seen to be believed, and under good growing conditions it will average 1½ lb. of good fruit per plant.

With large-scale production it is a regular practice to plant in September or, at the latest, early October, transplanting runners rooted in the open-ground, and to arrange them in double or single rows under cloches according to the actual time of planting and the variety grown. The later the planting, the smaller will be the plant, and with October planting the crop will be reduced to only 2 or 3 oz. per plant. The

variety 'Cambridge Favourite' is particularly suitable for cloche-growing because of its unobtrusive foliage, and results can be very satisfactory from September planting, but the flavour is nothing to that of 'Sovereign'.

After pegging out the required number of rows for cloche work, the open-ground bed must be considered. Again the spacing is influenced by the variety, soil conditions and the required life of the bed. I suggest, where soil conditions are good, 3 feet between the rows and 18 inches between the plants for 'Sovereign'. Closer spacing is satisfactory for varieties with less foliage, i.e. 2 feet 6 inches × 15–18 inches. Wide spacing in the rows will help to control grey mould and will allow the bed to remain for several years, if wanted. It is a good plan to remove every other plant after the second year, thus leaving them at 3 feet square, which will then provide ample room for the full crop in the third year, and the better ventilation of the bed will reduce the risk of grey mould.

After marking the beds, both the second and third batches of pot-runners should be collected from the ash bed and planted in their appointed places. Good planting pays, and the ball of roots, after a thorough watering, should not be broken or damaged but placed in the prepared hole, deep enough to allow the crown to be sitting at ground level, and loose soil is placed round the ball, firming it with the handle of the trowel.

If planting open-ground plants instead of pot-runners, using a trowel, the roots should be spread out at the back of the hole and not planted in a tight bunch, the crown should be at ground level and the soil made firm.

Owing to the difficulty of getting plants established in dry weather, pot runners are preferable for July or August planting. They require regular watering for the first two or three weeks if the weather is dry, and should never be allowed to suffer from lack of water. They will then be growing and should be given a "spot" dressing, that is, a sprinkling of fertilizer round each plant. We use the John Innes Base Fertilizer. Early in November the bed should be lightly pricked over.

The rows set aside for cloches should be covered in January or early February, according to the area, and not later than February 25. A spring dressing of the John Innes Base Fertilizer may be given, at the rate of 4 oz. to the square yard, to both the cloche plants and the open-ground bed, when growth shows, and the plants are sprayed well before flowering with a systemic insecticide against aphids and with Karathane against mildew. With regard to the systemic insecticide, great care must be taken to ensure an interval of *at least one month* between the spraying and the gathering of the fruit.

I would like to mention a few points with regard to the plants growing under cloches. These were covered probably some time in February, they have received a spring dressing and we assume are growing well. Ventilation should be given only in sunny periods,

using the panels provided, but at blossom time pollination is important, and if the weather is sunny and warm it is a good plan to remove one or two cloches in the rows for the day-time and so let the bees get at the flowers. I have seen sad examples of bad pollination as a result of crowded and unventilated cloches, where the ultimate fruit was almost negligible.

After blossom, before the fruitlets touch the soil, a good layer of straw should be provided, and although I am aware that strawing may somewhat delay ripening, it keeps the fruit clean and is a precaution against "grey mould", which is spread more readily where fruitlets touch wet soil. Immediately after strawing, give the plants one good soak, and this should see them through their fruiting period; the straw will act as a mulch in preventing evaporation of moisture.

To increase the size of the fruit it is wise to reduce the ventilation after strawing and keep the cloches close during the swelling time, admitting more air when colouring begins. If the weather is hot and the sun is scorching the ripening fruit, rather than shade the cloches and lose colour, we remove them entirely and stack them out of the way, covering the bed with repaired fish netting, supported by posts and horizontal wires. The fruit then finishes well, colour increases and magnificent weight is achieved through the benefit of natural dew at that time. This will delay ripening, but the fruit assumes a natural colour, is much easier to pick and the weight is increased. Provided adequate water has been given to the plants, and they have ripened slowly, really large fruit of first-class quality can be gathered; we often experience berries weighing 2½ oz. each! Here in Oxfordshire we usually begin picking in the middle of May, and this crop fills the gap between the glasshouse and open-ground crops.

OPEN-GROUND PLANTS

Turning to the open-ground bed in April, this has received the spring dressing and spray, and the plants are growing well. All runners should be removed as they appear and the bed well hoed and made weedless before strawing. After flowering, and before fruitlets touch the soil, a generous dressing of straw will raise them well up above it. If slugs are likely to be troublesome, a light watering with a slug killer on the surface of the soil round the plants, before strawing, may be an advantage. After strawing, one good soak should see the plants through their fruiting time. If the weather is very dry, it may be necessary to water before blossom as well, for never should strawberries be allowed to suffer from want of water when the fruit is swelling or, in fact, at any time.

For netting the beds, thin fencing posts are useful at intervals across the bed, about 10 feet each way, with galvanized wire to hold the repaired fish netting about 3 feet above the ground. The fruit should be ripe from mid-June onwards and, provided they have escaped

frost damage, will be of the same excellent size and quality that is usual from these August-planted one-year-old plants.

Each year the thrill and sense of achievement grows as one picks and enjoys the lovely fruit from these three batches, and few crops are more interesting and rewarding to grow.

SOME POINTS OF GENERAL INTEREST

Treatment of fruiting beds after gathering the fruit

After gathering the fruit in mid-July, the plants of both cloche and open-ground beds are either thrown away or kept for another year. If they are to stay, the foliage should be completely removed, either being cut off with shears or, preferably, burnt off. In dry weather it is simple to pull the straw away from the plants, set fire to it and see that it burns all the old foliage away, leaving the youngest green leaves in the centre of the plant unhurt. This burning process assists in insect control and provides a dressing of potash which is extremely beneficial. After burning, the bed should be given a good soak if the weather is dry, and be well hoed, drawing some loose soil up to the plants. Fresh crowns are made between July and October, together with fresh roots and abundant new and healthy foliage. Many aphids overwinter in the crowns of strawberry plants, and one spray in September with a systemic insecticide will free the plants before winter sets in. Early in November the bed should be forked, pricking only round the plants but forking deeper between the rows. A dressing of organic manure may be given at the same time.

Propagation from fruiting beds

Countless runners are produced from plants of all ages while fruit is being gathered and it is a great temptation to layer these into pots for making up a young bed. There are two major reasons against this policy. Firstly, the age of the parent plants should be considered and also the health and vigour of the bed. With vegetative propagation it is important to propagate only from young, healthy and vigorous plants, or the health of your stock may decline and virus diseases set in. Secondly, to maintain the vigour of your fruiting bed it is far wiser to help the plants to do one job at a time—to produce fruit and not runners also. Therefore all runners should be removed from a fruiting bed as they form.

Clearing and replanting fruiting beds

The profitable life of a fruiting bed is seldom longer than three to four years. As a rule, the finest fruit comes from one or two-year-old plants, and quantity rather than quality in the third and succeeding years.

In order to maintain vigour in your stock, it is a good practice to plant a young bed each year on a fresh piece of ground, and so to move

the strawberry bed round the kitchen garden rather than to keep it as a fixture in a fruiting cage. A few plants in the young bed can be de-blossomed and allowed to produce runners for making a new bed. It cannot be wise to replant an old bed with young plants.

Planting time

For runner production, open-ground plants should be planted in September or October and de-blossomed the following spring. From these, runners will be produced from June until October for layering in pots or the open-ground.

For fruiting beds, the June and July runners, if pot-layered and planted in August ex pots, have time to grow large and become well-established before the winter, and the best crop of fruit can be expected the following year.

September is the best month for planting open-ground runners, because the weather is generally suitable and there is time for the roots to develop before cold weather sets in.

It is a common practice when planting as late as October or November for fruiting beds, to de-blossom in the first year, also removing all runners, and these plants build up into excellent plants for fruiting the following year—their second summer. No crop in the first year means no return, and it is extravagant in ground space.

The value of potash

Potash is one of the most important foods for strawberries. Dressings of sulphate of potash at the rate of 2 oz. per square yard, may be applied to the surface in March.

Strawberry aphids

These are the principal carriers of the Crinkle and Yellow Edge virus diseases. Spray with systemic insecticide (Metasystox) before blossom, at least one month before gathering fruit and again *after gathering*, and in September. This spray is dangerous to use and must be handled with great care. Alternatively, Malathion may be used with greater safety, but perhaps is not so effective.

Botrytis (or Grey Mould) on the fruit

This fungus spreads rapidly in warm, damp weather. Remedies are largely cultural at present, e.g. plant in rows running north and south, not east and west: secure good ventilation of the bed by wide spacing between rows; straw early under green fruitlets before they touch the soil; lift any prostrate foliage and tie in an upright position to admit air to the fruit; thorough picking of even slightly affected berries to prevent the spread of the fungus. It is now possible to spray the plants with Captan when the flowers are opening, and this can be repeated three times at intervals of ten days, but it cannot be recommended for canning or deep freezing.

Mildew

Spray just before and immediately after flowering, under glass, with a Salicylanilide spray (Shirlan and Agral), and in the open with Karathane, or use sulphur dust more frequently.

Leaf Spot

This fungus disease increases in warm, damp seasons, but is not usually sufficiently serious to justify spraying the plants with a copper fungicide. It is removed with the foliage after the fruit is gathered.

A FEW RECOMMENDED VARIETIES

For early use:

'Royal Sovereign' is the undisputed favourite and for early forcing under glass; flavour outstanding.

'Cambridge Favourite' is a popular variety for cloches or frames, due to unobtrusive foliage and heavy cropping power in the first year; flavour fair.

'Cambridge Vigour' is very early and a good cropper; flavour fair.

For mid-season use:

'Talisman' and 'Redgauntlet' are interesting recent introductions from Scotland, and both crop heavily; they are attractive in appearance and their flavour is reasonably good.

For late use:

'Huxley' is the well-known heavy-cropping commercial variety, but flavour and quality leave much to be desired.

Season June to October:

Perpetual Fruiting type. 'Sans Rivale' and 'St. Claude' are two good varieties of this type.

All the above, with the exception of the "Perpetuals", are in the Ministry of Agriculture's Certification Scheme, and the most up-to-date virus-free stocks are obtainable from reputable nurserymen.

RECENT IMPROVEMENTS IN CROP CULTIVATION AND MANAGEMENT

G. D. Lockie, N.D.H.

(*Lecture given on September* 30, 1958, MR. F. A. SECRETT, C.B.E., V.M.H., *in the Chair*)

In the cultivation of horticultural plants we are committed to considerable manual work and attention to detail. On a commercial scale as much as ten in every twenty shillings of the grower's expenditure is labour cost. The lack of skilled workers all too frequently restricts the work to be undertaken.

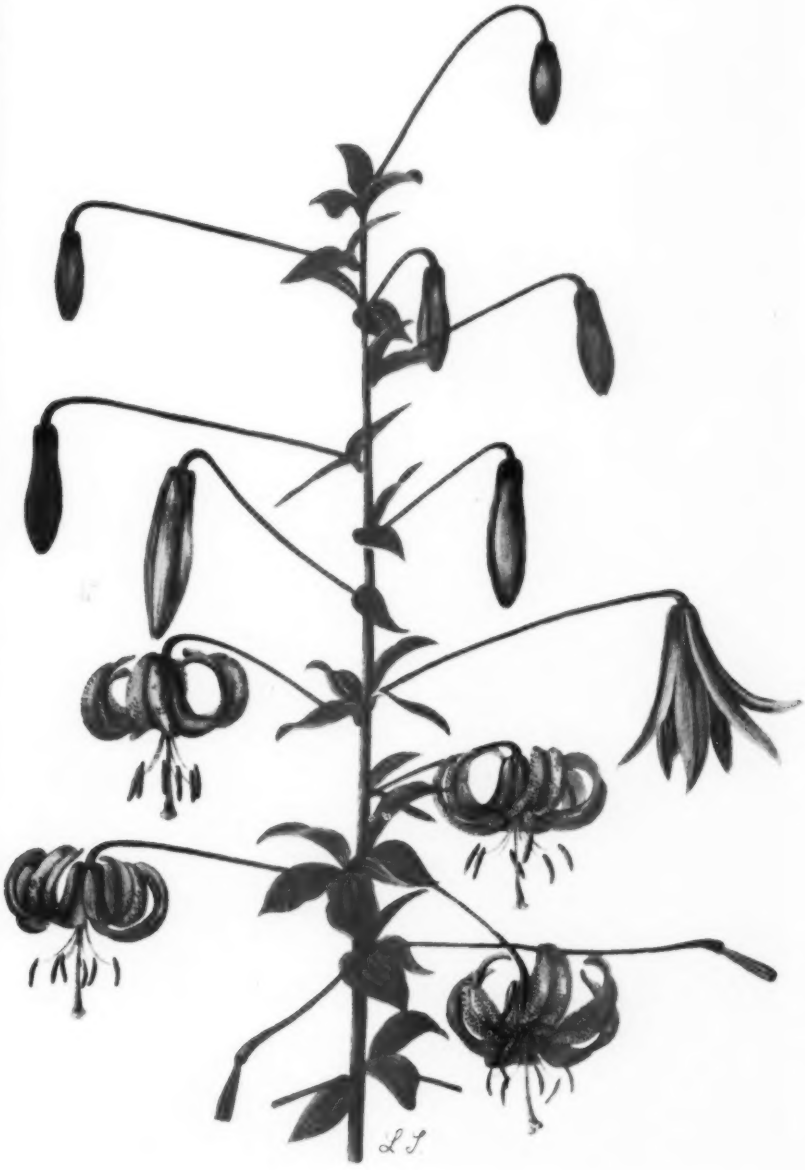


FIG. 62—*Lilium wardii* reproduced from the painting by Miss Lilian Snelling for Part III of the Supplement to the Elwes' Monograph of the Genus *Lilium*
(see p. 209)

Photo: Paul Popper

FIG. 63—Frank Kingdon-Ward, O.B.E., V.M.H.

Photo: J. E. Downward

FIG. 64—Strawberry 'Royal Sovereign' for early ripening in the ¾-span greenhouses of the Waterperry Horticultural School, showing arrangements of plants in order to obtain maximum light

FIG. 65—Strawing strawberries growing under cloches at Waterperry Horticultural School, showing alternate spaces previously occupied by autumn-sown lettuces and temporarily covered with cloches during the operation of strawing.

Photo: Michael Cox

FIG. 66—*Rhododendron wardii* (see p. 207)

Photos: P. M. Synge

FIGS. 67–68—*Rhododendron macabeanum.*

Above young foliage and below flower truss and leaf. Top photograph was taken at the garden on the Isle of Colonsay belonging to the late Lord Strathcona and Mount Royal and the lower one in the garden of Mr. G. H. Johnstone at Trewithen, Cornwall (see p. 207)

Photo: Plant Protections Ltd.

FIG. 69—The bedder used at Fernhurst showing the outside discs pushing the soil up to make the bed which is then levelled by the board behind (see p. 232)

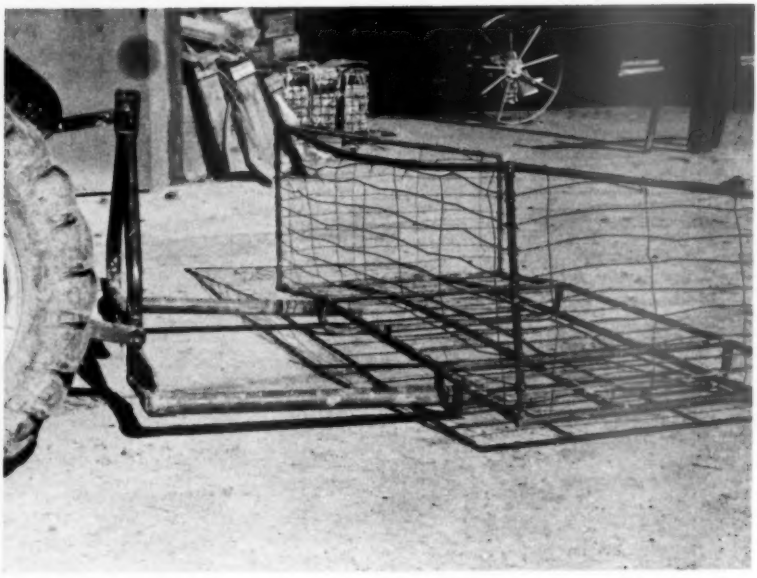


FIG. 70—A carrier for crops and boxes constructed to be towed by tractor (see p. 234)

FIG. 71—A tractor with crop carrier holding boxes which are placed in readiness for cutting lettuce (see p. 234)

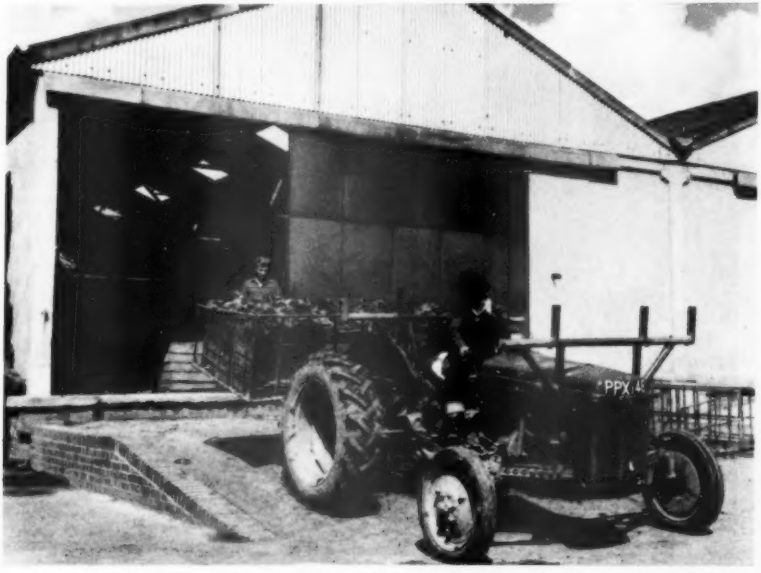


FIG. 72—The tractor with crop carrier delivering boxes of spinach at the Packing Shed (see p. 234)

FIG. 73—THE GARDEN ON THE ISLE OF COLONSAY
A view in the late Lord Strathcona's garden (see p. 213)

FIG. 74—Rhododendron 'May Day' (*R. griersonianum* × *R. haematodes*) at Colonsay. An unusually free flowering bush of very brilliant colour

Techniques for simplifying and reducing the work and for cutting the cost of goods and services are in common use in industry. A wider knowledge of how this can be done in horticulture is of great importance now and for its future.

From our experience in Market Gardening, Dutch Light cultivation and Glasshouse growing at Fernhurst Research Station I want to speak of two ways in which savings have been made:

(1) USING WORK STUDY. Since we began using Work Study techniques in 1952 we have achieved a saving in labour of three shillings in every twenty shillings-worth of fruit, flowers and vegetables grown.

(2) THE FERNHURST BED SYSTEM of market gardening. This has rationalized existing methods and mechanized the work more fully.

WORK STUDY, or to define it simply, the study of work, has three main objectives:

(i) To improve existing methods by better arrangement, simpler procedures, and easier working conditions.

(ii) To make better use of labour by finding the most effective number of workers for a given job, how to deploy them, and improve their training.

(iii) To improve the efficiency of workers and overcome the shortage of skilled labour by maintaining the best possible method of work, by properly applied incentive schemes and by promoting interest and co-operation.

These objectives are not new. The difference is that in Work Study an organized systematic procedure is used for examining and challenging why and how things are done.

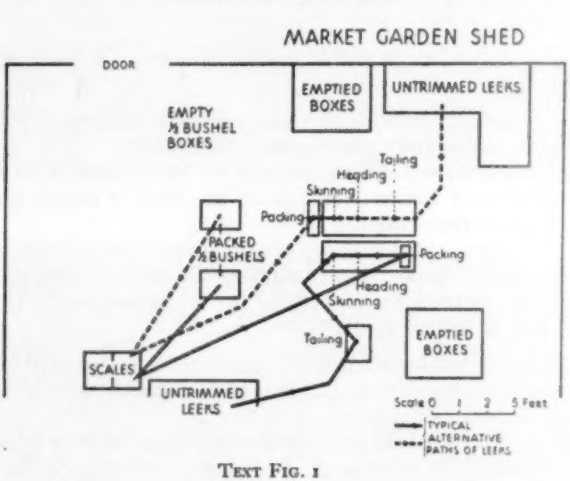
Many people have held the view that horticultural work could not be assessed successfully because of the variation in crops, soils, climate, and the need for skill and understanding of plants. This would seem to be true if judged by the little attention devoted to exploring it. I think this is because its approach is outside our usual experience, and perhaps rather frightening until understood.

Work Study has two basic aspects. The first—METHOD STUDY, investigates the ways of doing things, with the object of cutting out unnecessary work and making better use of materials and equipment. It has a basic procedure—to Select, Record, Examine, Develop, Install and Maintain.

First, the problem to be studied is SELECTED. This generally means taking the most costly or difficult job first. For example, steam sterilizing glasshouse soil was expensive in labour and fuel. This was our first study in glasshouse work, and we were able to introduce a new method which reduced the cost from £640 to £265 per acre (Text Fig. 6).

The next step is to observe and RECORD all work as it is carried out.

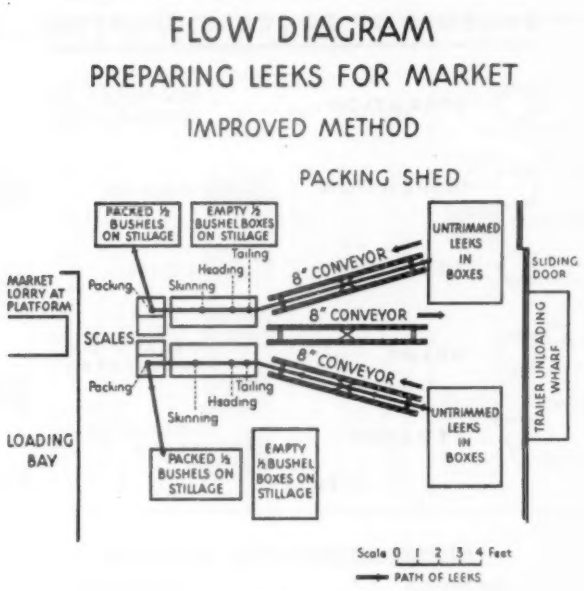
Several techniques can be used. The simplest, a *Flow or String Diagram*, is illustrated in Text Fig. 1 by a scale diagram of leek preparation and packing arrangements. The working area is shown with the position of all equipment, doors, materials, etc., and the observed paths followed by workers, leeks, and boxes is marked in. Text Fig. 2 is a Flow Diagram of leek packing after an improved arrangement had been worked out.



TEXT FIG. 1

Another technique is the *Flow Process Chart*, in which a simple symbol shorthand for five basic activities (Text Fig. 3) in work is used to record events. These charts make it easy to see the activities in a job and question, "Are they really necessary?" This method was very successful in a study of final potting of mid-season chrysanthemums, where five operations and 200 ft. of travelling were saved (Text Fig. 4).

When investigating the work of a team of men, or of men and machines, a *Multiple Activity Chart* is constructed. On this, columns with a common-time scale are allotted to each man or machine. On these, the different operations are marked in at appropriate times when they occur. The amount of waiting or non-working time can be seen easily, and the opportunities for better combinations worked out. Text Fig. 5 is a Multiple Activity Chart of the job of steam sterilizing mentioned earlier. It shows how the waiting time in the original



TEXT FIG. 2

method was eliminated by giving the man three units to handle instead of two.

Other more detailed recording methods are in use, but these three have been found adequate for most of our horticultural jobs.

After recording we come to the most important step—to EXAMINE critically all the facts. In this the Work Study man uses a comprehensive question sequence asking:

Is it necessary—Why?	Who is it done by?
What is achieved?	How is it done?
Where is it done?	What are the alternatives?
When is it done?	

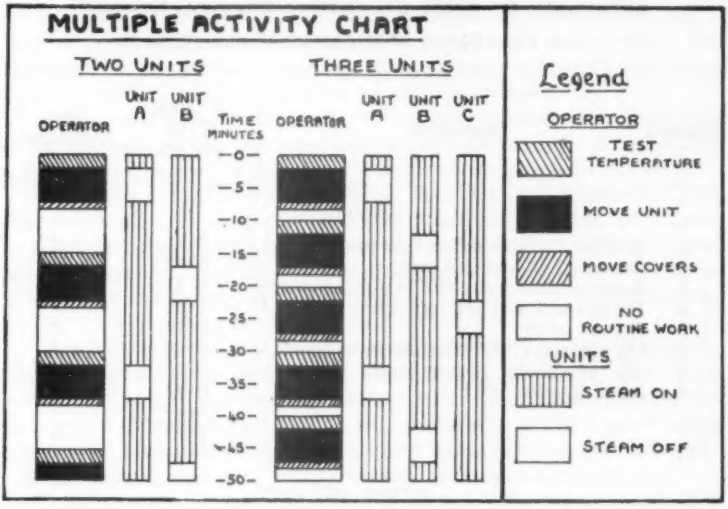
In the majority of cases in our experience examination confirms that jobs are being done the best way. Occasionally, they are in the wrong sequence or place. Sometimes operations can be carried out simultaneously or eliminated altogether. Most frequently, transport, loadings and unloadings can be reduced by rearrangement or carrying larger loads. Adequate small tools, properly placed, avoid delays in many jobs, such as tying, bunching and packing.

When the job has been examined the next step is to DEVELOP the new method with the essential operations and improvements, at the

TEXT FIG. 3

TEXT FIG. 4

same time re-examining to ensure the changes satisfy the requirements of the job and those carrying it out. The leek job illustrated in Text Fig. 2 demonstrated the need for this. When we had installed the new method we had so effectively taken the work out of it that workers complained of being cold!



TEXT FIG. 5

STEAM STERILIZING IN GLASSHOUSES

Hours and Costs per acre

Method	Man Hours	Labour Cost at 3/– per hour	Fuel (tons)	Cost at £6 per ton	Total Cost per acre
Whole area steamed with Hoddesden pipes . .	2,250	£340	50	£300	£640
Beds only double dug and steamed using spiked grid	800	£145	20	£120	£265

* Includes bonus paid for double-digging beds in 500 hours.

TEXT FIG. 6 shows the savings made by the new method of steam sterilizing. The beds only were steamed instead of the whole area and special spiked grids, which one man could handle, were used. The digging and steaming were carried out as separate operations. After the reorganization the total cost was reduced from £640 to £265.

SUMMARY OF TIME STUDIES—ORIGINAL METHOD

Job: Final Potting of Mid-season Chrysanthemums

Element	Description	Allowed Time per pot	Percentage
	POTTING		
1	Position "whalehide" pot on bench	0·11	3
2	One-third fill and ram down	0·67	19
3	Remove plant from "60" pot and position	0·27	8
4	Fill pot with soil and ram down	1·32	37
5	Put pot aside	0·14	4
6	Up plants (in "60") from store to bench	0·13	4
7	Up "whalehide" pots to bench	0·11	3
8	Aside emptied "60"	0·02	–
		2·77	78
	SETTING OUT POTS		
9	Load 28 pots on to "Wrigley" truck	0·11	3
10	Drive "Wrigley" to ranges	0·05	1
11	Set out 28 pots	0·12	4
12	Drive "Wrigley" to potting shed	0·05	1
		0·33	9
	COLLECTING COMPOST		
13	Drive "Wrigley" to steriliser shed	0·04	1
14	Fill with compost (12 bushels)	0·13	4
15	Drive "Wrigley" to potting shed	0·04	1
16	Shovel compost on to potting bench	0·14	4
		0·35	10
	COLLECTING PLANTS		
17	Hand-stretcher to ranges	0·02	–
18	Load with 70 plants	0·08	2
19	Hand-stretcher to potting shed	0·02	–
		0·12	3
	TOTAL	3·57	100

TEXT FIG. 7 shows a summary of time studies of the original method of potting chrysanthemums shown in Text Fig. 4. It will be seen that a very large proportion of the time was taken up in ramming the soil. It was found that sufficient consolidation could be given by a tomato dibber eliminating the ramming. The job was reorganized so that the final potting was done on the standing ground, and an enormous saving was made (Text Fig. 8).

In INSTALLING the new method care must be taken to explain it fully to the workers and make provision for it to work smoothly. For example, in the packing shed the debris from vegetables can often interfere with an otherwise good working arrangement.

Lastly, MAINTAINING the improved method is particularly important in horticulture, where the same jobs occur infrequently. Surrounding conditions often alter and there is a tendency to revert to old ways.

The second aspect of Work Study is WORK MEASUREMENT. This determines the proper time for doing a job which must, of course, be carefully defined. It is based on the conception of measuring human effort in terms of time and rate of working, using work units or minutes of work at a standard speed. For example, the work content of hoeing, digging or disbudding can be expressed as work units.

The Work Units are built up from detailed time studies of the job, which is divided into small easily recognizable elements. The Work Study man judges the rate of working as he times, and converts the timing to a Standard Rating. To this is added a percentage of extra time, called Compensating Rest, to allow workers to recover normally from the fatigue, and work all day without abnormal tiredness.

Training and skill are required to carry out Time Studies, and they are best made by a person not responsible for the work involved.

Work Measurement has four main uses. It is the basis for:

(i) Comparing alternative methods.
(ii) Accurate forecasting of labour requirement.
(iii) Planning what work can be accomplished by a given labour force.
(iv) Sound incentive schemes, the work content being the yardstick for payment of bonuses.

We can see in the studies of potting chrysanthemums how the number of workers can be decided and how methods compare.

MID SEASON CHRYSANTHEMUMS FINAL POTTING

WORK UNIT VALUES BY TIME STUDY

	WORK UNIT VALUE PER POT	ALLOWED TIME PER 10,000 POTS
OLD METHOD	4.6	770 hours
NEW METHOD	2.6	430 hours
SAVING	2.0	340 hours

ACTUAL LABOUR COSTS

1954	OLD METHOD	8,000 Plants	£149. 15. 11.
1955	NEW METHOD PLUS INCENTIVE	10,000 Plants	£73. 13. 10.

TEXT FIG. 8

In actual growing operations we have detailed time studies of crops and different varieties. Early chrysanthemums are one of our main crops. Disbudding 22,500 plants used to take about 1,650 hours. After studies had been made it was reorganized and an incentive bonus given, reducing the time by more than half to 775 hours. For easier comparison with your own experience, each plant carrying 8–9 blooms took only two minutes.

The original method was to choose the time when most shoots were ready to disbud, then employ as many disbudders as possible to complete the operation in quick time. This required extra unskilled workers, who had to be instructed continuously, inevitably disbudding a few shoots too advanced and some too soon for easy removal. After studies, the reorganization gave each regular worker an equal proportion of all varieties to disbud throughout the season, and we arranged to disbud as buds reached the best size. With our conditions and varieties this requires five disbuddings at weekly intervals. Introduction of the bonus scheme meant that the job was done more quickly. The faster workers who finished disbudding their particular beds before the others were able to do other jobs and so earn additional bonus. The reorganization meant that casual labour was no longer required and much less supervision was needed.

Another interesting and useful aspect is in the differences in work required by different varieties. For example, the allowed time before bonus for the variety 'Sweetheart', averaging 8·5 flowers, is 3·33 minutes. 'Red Flare' with an average of 10·8 flowers, is 2·93 minutes, a saving of 0·4 minutes per plant, or 11,600 minutes if you were growing an acre. 'Red Flare' is an easier variety to disbud and the shoots come out more easily, but the difference in time taken was not realized until time studies were carried out.

In another important crop, tomatoes under glass, we have compared the attention time for different varieties. It takes a total of 8·56 minutes during the growing season to train and de-leaf a plant of 'Baby Lea', yielding 12 lb. tomatoes, compared with 9·41 minutes for 'Money-maker', yielding 11½ lb. per plant.

In total, Time Studies build up into a work picture for the whole life-cycle of crops. They form a procedure which gives all the method details, past experience and performance for organizing each job as it arrives during the season.

To conclude, our Work Study experience may be summed up in the following points:

Work has proceeded more effectively.
Better planning has resulted.
Workers' interest has increased.
Quality of work has been maintained.
Bonus earnings have contributed to a more contented staff.
New workers have improved rapidly by the example of purposeful work.

The difficulty of variations in conditions has not proved unmanageable.

In 1957 some 65 per cent of our work was on incentive bonus scheme, which earned for the workers an average of 9*d.* extra per hour over the basic wage.

A comparison over six years, of labour costs per £1,000 of sales, shows a consistent improvement.

	1952 £	1953 £	1954 £	1955 £	1956 £	1957 £
Wages per £1,000 of sales —adjusted for change in basic rates . .	444	426	405	375	316	295

FERNHURST: SELF-BLANCHING CELERY

ANALYSIS OF HOURS, WAGES AND BONUS 1952-1957

NOTE: HOURS AND WAGES ARE TAKEN FROM THE ANNUAL CROP ACCOUNTS ISSUED BY THE COST ACCOUNTS DEPARTMENT

	1952	1953	1954	1955	1956	1957
MAN HOURS PER 1000 LIGHTS	1740	1440	865	680	645	690
WAGES PLUS BONUS PER 1000 LIGHTS	£196	£168	£116	£97	£103	£102
AVERAGE HOURLY EARNINGS	2/3d	2/4d	2/8d	2/10d	3/2d	3/-d
CROP UNIT HOUR	33	39	66	84	88	83
PERCENTAGE OF WORK ON BONUS	NIL	NIL	50	60	75	70

TEXT FIG. 9 shows how, over six years, the average earnings and bonus of the workers on the self-blanching celery crop have increased, but the total wages per light in 1957 was only about half that paid in 1952.

THE FERNHURST BED SYSTEM OF MARKET GARDENING

When we planned the Fernhurst Market Garden in 1946 we had the advantage of starting from the beginning, without having to consider existing lay-out, buildings, tractors and implements. It was an opportunity to consider the basic cropping arrangements and how more effective mechanization could be achieved by planning right from the start. Market gardeners make full use of tractors and mechanized equipment but frequently they are of different types and sizes and there

are numerous special machines for different jobs. Clearly some standardization was desirable.

The value of fertile land, plus the costs of manuring and irrigating necessary to grow good quality crops, means that the land must be cropping intensively to produce adequate cash returns.

This, of course, makes mechanization difficult. As crops grow larger it becomes increasingly hard to steer any implement through them without doing serious damage. Cultivations, moving equipment for irrigating, and spraying for pests and disease, has often had to be done manually or neglected. All empty and full boxes for harvesting the crops have had to be carried by workers from and to field roadways. This is time-consuming and heavy work, tiring workers for the rest of the day.

In planning our mechanization it was important to choose as much standard equipment as possible so as to reduce capital costs and difficulties with spares. Fortunately at that time the medium-powered post-war tractors had been developed. These are capable of all types of cultivation, have a wide range of equipment easy to fit and control, and are very manœuvrable and nimble in operation—all essential to the intensity and tempo of market gardening.

Our first step was to rationalize cropping methods to allow:

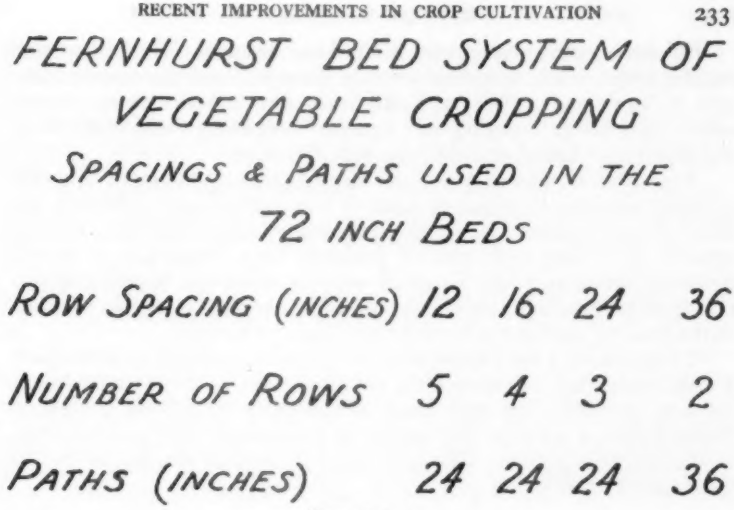
(i) the tractor and equipment to pass through the crops at all stages of development;
(ii) the crop rows and spacing to maintain an adequate number of plants per acre;
(iii) any ill effects on the soil caused by using heavy wheeled tractors to be reduced to a minimum.

This was achieved by laying out the fields for easy access and arranging the crops in standard beds within the wheel width of the tractor, and over which it could run (Fig. 70). Having the tractor wheel paths outside the implements enabled the tractor to turn into its previous outside track, greatly helping the driver to keep the beds parallel. In effect, it keeps the tractor on rails, with obvious advantages for succeeding cultivations.

Plant rows were grouped into as few widths as possible for the variety of crops so as to minimize the adjustment of implements. The choice of a bed width of 72 inches allowed the tractor to be used at the same wheel setting for all work—again important on a small market garden because of frequent changes of jobs during the day (Text Fig. 10).

Plant spacings within the rows are arranged to give approximately the usual number of plants per acre, no allowance being required for walking between the plants when working (Text Fig. 11).

For planting and sowing in the spring the soil is made up into raised beds, using a specially designed bed maker. If crops are cleared and ploughing can be completed in good condition in the autumn, raised


FERNHURST BED SYSTEM OF
VEGETABLE CROPPING
SPACINGS & PATHS USED IN THE
72 INCH BEDS
ROW SPACING (INCHES) 12 16 24 36
NUMBER OF ROWS 5 4 3 2
PATHS (INCHES) 24 24 24 36

TEXT FIG. 10

TABLE II. PLANTING AND SPACING WITH 72" BEDS.

CROP	FULL PLANTING		72" BEDS				
	SPACING	USUAL Nº PER ACRE	SPACING	Nº OF ROWS 5	4	3	2
BEET	12" x 6"	87,120	x 5"	87,120			
LEEKS	12" x 8"	65,340	x 7"	62,228			
LETTUCE	12" x 11"	47,520	x 9"	48,400			
" COS	16" x 14"	28,000	x 15"	29,040			
SPRING CABBAGE	12" x 9"	58,080	x 8"	54,450			
SUMMER CABBAGE	18" x 15"	23,232	x 15"		23,232		
WINTER CABBAGE	24" x 18"	14,520	x 20"		17,424		
BEANS, BROAD	24" x 6"	43,560	x 6"			43,560	
CAULIFLOWER	30" x 18"	11,616	x 26"			10,052	
SWEET CORN	24" x 15"	17,424	x 15"			17,424	
BEANS, BUSH	36" x 6"	29,040	x 6"				29,040
MARROWS	36" x 24"	7,260	x 24"				7,260
SPROUTS	36" x 36"	4,840	x 36"				4,840

TEXT FIG. 11

beds are made then. This gives improved drainage and the development of a natural tilth which warms up more readily the following spring.

Generally, the standard cultivation equipment was suitable, with some adjustment, for our system, but in some cases such as multiple seed drills and multiple marking gangs, special equipment was required.

Efficient spraying equipment has become essential. The bed system enables crops which would be severely damaged, and made unmarketable, to be treated speedily and effectively with insecticides and fungicides. Weedkiller spraying has become increasingly important with the shortage of labour and the high cost of hoeing.

Transport is necessary for moving irrigation equipment and the carrying and easy handling of produce from cutters and pickers in the field. For this latter job, simple forks which supported light carriers, capable of holding 7–10 cwt. of produce, were attached to a tractor hydraulic implement lift. Coupled with the speed and manœuvrability of a light tractor, this ensures the quick delivery of perishable produce to the packing shed in fresh condition (Figs. 71 to 73).

To conclude, I am conscious of the rather specialized subject which I have presented. Both aspects are important in commercial horticulture, although they may seem of less value to private gardeners. Nevertheless, I am sure the benefit of Work Study can and will help in the domestic garden. The time saved in routine jobs can be put to good use elsewhere.

WISLEY TRIALS, 1958

PERENNIAL ASTERS

Seventy-seven stocks of perennial asters (Michaelmas daisies) were grown at Wisley in 1958; many of these stocks have received awards in previous years and were grown to compare with the new stocks of which this year there were ten. In order to control wilt (*Verticillium vilmorinii*) all varieties, except those in the Amellus section, were propagated from tip cuttings taken in March. These cuttings were planted on April 25, 1958. Varieties in the Amellus group were not divided in 1958.

The trial was inspected by a sub-committee of the Floral Committee A on September 23, 1958, and on its recommendation the Council has made the following awards to perennial asters as varieties for garden decoration.

The number in brackets after the description of the variety was that under which it was grown in the trial.

Novi-Belgii section

FELLOWSHIP. (Raised by Messrs. R. Sandford & Co., introduced and sent by Messrs. Thomas Carlile (Loddon Nurseries) Ltd., Carlile's Corner, Twyford, Berks.) **F.C.C.** September 23, 1958. Described R.H.S. JOURNAL, **83,** 126 (**A.M.** 1957). [29]

MARIE BALLARD. (Raised by Mr. P. W. Picton, introduced and sent by Messrs. Old Court Nurseries Ltd., Colwall, Malvern, Worcs.) **F.C.C.** September 23, 1958. Described R.H.S. JOURNAL, **81,** 139 (**A.M.** 1955). [41]

AUTUMN GLORY. (Raised by the late Mr. H. C. Elsdon, introduced and sent by Messrs. Bakers' Nurseries Ltd., Codsall, nr. Wolverhampton,

Staffs.) **A.M.** September 23, 1958. Plant 4½ feet high, compact and erect habit; flowers 2¼ inches diameter, semi-double, carried in a fairly loose panicle, a colour near Orchid Purple (H.C.C. 31). [26]

PEERLESS. (Raised by Messrs. R. Sandford & Co. Ltd., introduced and sent by Messrs. T. Carlile (Loddon Nurseries) Ltd.) **A.M.** September 23, 1958. Described R.H.S. JOURNAL, **83**, 127 (**H.C.** 1957). [35]

PROFESSOR KIPPENBERG. (Raised by Messrs. Ernst Benary Ltd., Hann-Munden, Germany, introduced and sent by Messrs. T. Carlile (Loddon Nurseries) Ltd.) **A.M.** September 23, 1958. Described R.H.S. JOURNAL, **83**, 127 (**H.C.** 1957). [12]

TAPESTRY. (Raised, introduced and sent by Messrs. Old Court Nurseries Ltd.) **A.M.** September 23, 1958. Described R.H.S. JOURNAL, **80**, 144 (**H.C.** 1954). [55]

TUDOR ROSE. (Raised by Mr. A. H. Harrison, introduced and sent by Messrs. Winkfield Manor Nurseries, Ascot, Berks.) **A.M.** September 23, 1958. Described R.H.S. JOURNAL, **82**, 92 (**H.C.** 1956). [62]

JULIA. (Raised, introduced and sent by Messrs. Bakers' Nurseries Ltd.) **H.C.** September 23, 1958. Plant 5 to 5¾ feet high, compact and erect habit; flowers 2⅝ inches diameter, semi-double, carried in a fairly loose panicle, Cobalt Violet (H.C.C. 634/2) at base of florets, gradually fading to almost white at tips. [67]

LADY IN BLUE. (Raised by Messrs. Perry's Hardy Plant Farm, Enfield, Middx., introduced and sent by Messrs. T. Carlile (Loddon Nurseries) Ltd.) **H.C.** September 23, 1958. Plant 12 to 15 inches high, very compact habit; flowers 1¼ to 1½ inches diameter, semi-double, carried in a close panicle, Veronica Violet (H.C.C. 639/1), inner florets flushed Campanula Violet (H.C.C. 37/2) when first opening. [10]

PERCY THROWER. (Raised by Mr. R. A. Lidsey, introduced and sent by Messrs. Gayborder Nurseries Ltd., Melbourne, Derbyshire.) **H.C.** September 23, 1958. Plant 4 feet high, compact and erect habit; flowers 2¼ to 2½ inches diameter, semi-double, carried in a fairly close panicle, Aster Violet (H.C.C. 38/1). [40]

Amellus section

NOCTURNE. (Raised by Mr. Alan Bloom, introduced and sent by Messrs. Blooms' Nurseries Ltd., Bressingham, Diss, Norfolk.) **A.M.** September 23, 1958. Described R.H.S. JOURNAL, **82**, 92 (**H.C.** 1956). [3]

DAHLIAS

Two hundred and forty-five stocks of dahlias were grown at Wisley in 1958. Fifty-two of these stocks were grown for the first time, having been selected during 1957 for trial at Wisley by the Joint Dahlia Committee of The Royal Horticultural Society and The National Dahlia Society.

The trial was inspected by the Joint Dahlia Committee on August 6, 22 and September 8, 1958, and on its recommendation The Royal Horticultural Society and The National Dahlia Society have made jointly, after trial at Wisley, the following awards to dahlias as varieties for garden decoration.

The varieties are arranged in this report according to the classification of The National Dahlia Society.

The number in brackets after the description of the variety was that under which it was grown in the trial.

Class VIA. Large-flowered Decorative

ARUBANITA. (Raised, introduced and sent by Messrs. J. G. Ballego & Sons, Bloemhove Nurseries, Leiden, Holland.) **H.C.** August 6, 1958. Plant 4½ to 5 feet high, compact and erect, bearing flower stems 15 inches long. Flowers 9½ to 10 inches diameter, a vivid red near Orient Red (H.C.C. 819). [17]

Class VIB. Medium-flowered Decorative

PEACE. (Raised, introduced and sent by Messrs. K. Maarse Dzn. Jr., Uiterweg 32, Aalsmeer, Holland.) **H.C.** August 22, 1958. Plant 4½ feet high, compact and erect, bearing flower stems 14 to 18 inches long. Flowers 7 to 7½ inches diameter, outer florets white, inner florets cream. [20]

Class VIC. Small-flowered Decorative

JEAN GOODSWEN. (Raised, introduced and sent by Messrs. Brown & Such Ltd., Royal Berkshire Nurseries, Maidenhead, Berks.) **A.M.** August 6, 1958. Described R.H.S. JOURNAL, **82**, p. 30 (**H.C.** 1956). [76]

ANNEKE WEIDNER. (Raised, introduced and sent by Messrs. J. G. Ballego & Sons) **H.C.** August 22, 1958. Plant 3½ to 4 feet high, compact and erect, bearing flower stems 12 inches long. Flowers 4½ to 4¾ inches diameter, white, outer florets overlaid Bishops Violet (H.C.C. 34/1), inner florets touched Doge Purple (H.C.C. 732) at tip. [71]

CHORUS GIRL. (Raised, introduced and sent by Messrs. Dobbie & Co. Ltd., Scottish Seed Establishment, Edinburgh, 7.) **H.C.** August 6, 1958. Plant 4 feet high, very compact and erect, bearing flower stems 16 to 18 inches long. Flowers 4¼ inches diameter, Roseine Purple (H.C.C. 629). [65]

EDNA MADGET. (Raised, introduced and sent by Messrs. Brown & Such Ltd.) **H.C.** August 22, 1958. Plant 4 feet high, compact and erect, bearing flower stems 18 to 20 inches long. Flowers 5 to 5½ inches diameter, Persian Rose (H.C.C. between 628/2 and 628/3). [69]

MURRAYFIELD. (Raised, introduced and sent by Messrs. Dobbie & Co. Ltd.) **H.C.** September 8, 1958. Plant 5½ feet high, compact and erect, bearing flower stems 15 to 18 inches long. Flowers 4 to 4¼ inches diameter, Signal Red (H.C.C. 719). [54]

Class VID. Miniature-flowered Decorative

JESCOT SUSAN. (Raised, introduced and sent by Messrs. Jescot Dahlias, Hatfield Road, St. Albans, Herts.) **H.C.** September 8, 1958. Plant 3 to 3½ feet high, compact and erect, bearing flower stems 12 to 15 inches long. Flowers 3¼ to 3½ inches diameter, a colour near Orient Red (H.C.C. 819), florets tipped white. [63]

LUCY WHANT. (Raised, introduced and sent by Mr. C. A. Piper, Heywood Nurseries, Diss, Norfolk.) **H.C.** August 22, 1958. Plant 4 to 4½ feet high, compact and erect, bearing flower stems 10 to 12 inches long. Flowers 2¼ inches diameter, Saffron Yellow (H.C.C. 7/3), tips of florets slightly tinged pink. [205]

Class IXA. Large-flowered Cactus

BELLE OF THE BALL. (Raised, introduced and sent by Messrs. D. Bruidegom, Baarn, Holland.) **A.M.** August 22, 1958. Plant 4 feet high, compact and erect, bearing flower stems 20 to 24 inches long. Flowers 7¼

inches diameter, Rhodamine Pink (H.C.C. 527/1) fading to Rhodamine Pink (H.C.C. 527/3) at tips, inner florets creamy pink. The flowers of this variety usually exceed 8 inches in diameter particularly when the plant is grown for exhibition purposes. [123]

ANNE RICHES. (Raised, introduced and sent by A. T. Barnes, Esq., Kingsbrook Gardens, Cardington Road, Bedford.) **H.C.** September 8, 1958. Plant 4 feet high, compact and erect, bearing flower stems 16 to 18 inches long. Flowers 9¾ to 10 inches diameter, Orient Red (H.C.C. 819), inner florets slightly deeper colour. [117]

GEORGE LEAK. (Raised and sent by Messrs. James Stredwick & Son, Silverhill Park, St. Leonards-on-Sea, Sussex.) **H.C.** September 8, 1958. Plant 4½ to 4¾ feet high, compact and erect, bearing flower stems 16 inches long. Flowers 9½ to 10 inches diameter, outer florets cream, inner florets deep cream. [94]

MRS. DE RUYTER'S MEMORY. (Raised, introduced and sent by Mr. W. de Ruyter, P.O. Box 9, Dorpsstraat 54, Oegstgeest, Holland.) **H.C.** August 6, 1958. Plant 3 feet high, compact and erect, bearing flower stems 18 inches long. Flowers 9½ inches diameter, Solferino Purple (H.C.C. 26/2), fading to Solferino Purple (H.C.C. 26/3) at margin of florets. [92]

SHOWPIECE. (Raised, introduced and sent by Messrs. D. Bruidegom.) **H.C.** September 8, 1958. Plant 4½ feet high, compact and erect, bearing flower stems 15 to 18 inches long. Flowers 8¼ to 8½ inches diameter, Nasturtium Red (H.C.C. between 14 and 14/1). [110]

SOEST VOORUIT. (Raised by Mr. A. C. Shook, 15 Klaarwaterweg, Soest, Holland, introduced and sent by Messrs. D. Bruidegom.) **H.C.** September 8, 1958. Plant 5 to 5½ feet high, compact and erect, bearing flower stems 18 inches long. Flowers 8½ inches diameter, Carrot Red (H.C.C. 612/1), inner florets overlaid Fire Red (H.C.C. 15/1). [108]

SUPERCLASS. (Raised, introduced and sent by Messrs. D. Bruidegom.) **H.C.** August 22, 1958. Plant 5½ feet high, compact and erect, bearing flower stems 21 inches long. Flowers 9 inches diameter, Jasper Red (H.C.C. 018/1) changing to Mimosa Yellow (H.C.C. 602) at base of floret. [101]

UNIQUE. (Raised, introduced and sent by Messrs. D. Bruidegom.) **H.C.** September 8, 1958. Plant 3½ feet high, compact and erect, bearing flower stems 16 to 18 inches long. Flowers 8½ inches diameter, outer florets Tyrian Purple (H.C.C. 727) fading to Tyrian Purple (H.C.C. 727/3) at tips, inner florets Chrysanthemum Crimson (H.C.C. 824). [126]

Class IXB. Medium-flowered Cactus

ECLIPSE. (Raised, introduced and sent by Mr. L. A. Hoek, Clingendaal 12, Den Haag, Holland.) **A.M.** August 22, 1958. Plant 4½ feet high, compact and erect, bearing flower stems 20 to 22 inches long. Flowers 6½ inches diameter, a deep rich velvety red near Orient Red (H.C.C. 819), inner florets slightly deeper colour. [118]

GOLDEN HEART. (Raised, introduced and sent by Messrs. D. Bruidegom.) **H.C.** August 22, 1958. Plant 4 to 4½ feet high, compact and erect, bearing flower stems 18 to 20 inches long. Flowers 7¼ inches diameter, Dresden Yellow (H.C.C. 64/1) at base of florets, remainder overlaid Dutch Vermilion (H.C.C. 717), inner florets slightly deeper colour. [149]

GUIDING STAR. (Raised, introduced and sent by Messrs. K. Maarse Dzn. Jr.) **H.C.** August 6, 1958. Plant 3½ feet high, compact and erect,

bearing flower stems 22 inches long. Flowers 7 inches diameter, a vivid red near Orient Red (H.C.C. 819), extreme base of florets yellow. [158]

HELEN SHERWOOD. (Raised, introduced and sent by Messrs. Brown & Such Ltd.) **H.C.** August 22, 1958. Plant 3¾ feet high, compact and erect, bearing flower stems 18 to 22 inches long. Flowers 7½ inches diameter, Geranium Lake (H.C.C. 20/1) suffused Carmine (H.C.C. 21/1). [156]

LILAC VEIL. (Raised, introduced and sent by Mr. W. de Ruyter.) **H.C.** September 8, 1958. Plant 4½ feet high, compact and erect, bearing flower stems 15 to 18 inches long. Flowers 7 inches diameter, Cyclamen Purple (H.C.C. between 30/1 and 30/2). [179]

NOCTURNE. (Raised, introduced and sent by Messrs. N. J. van Oosten, N.O. Indie 427A, Den Haag, Holland.) **H.C.** August 22, 1958. Plant 4½ to 5 feet high, compact and erect, bearing flower stems 15 to 18 inches long. Flowers 6 inches diameter, Rhodamine Purple (H.C.C. 29/1). [173]

PERFECTOS. (Raised, introduced and sent by Messrs. D. Bruidegom.) **H.C.** August 22, 1958. Plant 4½ feet high, compact and erect, bearing flower stems 18 to 20 inches long. Flowers 7½ inches diameter, a rich bright red near Signal Red (H.C.C. 719), inner florets a colour near Blood Red (H.C.C. 820). [160]

POLAR BEAUTY. (Raised, introduced and sent by Messrs. D. Bruidegom.) **H.C.** August 6, 1958. Plant 4½ to 5 feet high, compact and erect, bearing flower stems 24 to 28 inches long. Flowers 6½ inches diameter, outer florets pure white, inner florets creamy white. [19]

Class IXC. Small-flowered Cactus

KLANKSTAD KERKRADE. (Raised and introduced by Messrs. D. Bruidegom, sent by Mr. Vincent F. Parker, Hinchley Wood, Esher, Surrey.) **H.C.** September 8, 1958. Plant 5¼ feet high, compact and erect, bearing flower stems 8 to 12 inches long. Flowers 5¼ to 5½ inches diameter, outer florets Primrose Yellow (H.C.C. 601/3), inner florets Primrose Yellow (H.C.C. 601/2), deepening to Primrose Yellow (H.C.C. 601/1) at centre. [184]

MILDRED PHILPOTS. (Raised, introduced and sent by Messrs. Brown & Such Ltd.) **H.C.** August 6, 1958. Plant 4 to 4½ feet high, compact and erect, bearing flower stems 18 inches long. Flowers 5¾ inches diameter, Shell Pink (H.C.C. 516), outer half of florets suffused Roseine Purple (H.C.C. 629), base of florets yellow. [195]

PINNACLE. (Raised, introduced and sent by Messrs. K. Maarse Dzn. Jr.) **H.C.** September 8, 1958. Plant 4½ to 5 feet high, compact and erect, bearing flower stems 18 to 20 inches long. Flowers 5 to 5¼ inches diameter, Dutch Vermilion (H.C.C. 717). [188]

TWEED. (Sent by G. F. Drayson, Esq., 23 Palmerston Road, Buckhurst Hill, Essex.) **H.C.** September 8, 1958. Plant 5½ to 5¾ feet high, compact and erect, bearing flower stems 18 to 20 inches long. Flowers 4¾ to 5 inches diameter, a clear bright yellow, near Primrose Yellow (H.C.C. between 601 and 601/1). [183]

Class XI. Cactus Dwarf Bedding

FRANK SOETEN. (Raised, introduced and sent by Messrs. D. Bruidegom.) **A.M.** August 6, 1958. Described R.H.S. JOURNAL, 83, p. 126 (**H.C.** 1957). [221]

PENSTEMONS, RAISED FROM SEED

Five stocks of penstemons were received for trial at Wisley in 1957. The trial was sown under glass on July 10, 1957, and the resulting seedlings were potted on into three-inch pots and finally into five-inch pots. The pots were plunged in ashes in a cold frame for the winter. In the spring the plants were gradually hardened off in preparation for planting out in the open, which took place on April 21, 1958. Sixty plants of each stock were grown, in rows 2 feet apart, the plants being spaced 15 inches apart in the rows.

The trial was inspected by a sub-committee of the Floral Committee A on July 11, 18 and 25, 1958, and on its recommendation the Council has made the following awards to penstemons raised from seed.

The number in brackets after the description of the variety was that under which it was grown in the trial.

EXCELSIOR STRAIN. (Raised, introduced and sent by Messrs. Watkins & Simpson Ltd., 26/29 Drury Lane, Covent Garden, London, W.C.2.) **A.M.** July 25, 1958. Plant 3 to 3½ feet high, vigorous, erect, much branched; leaves medium green. Flower stems stout, medium green; inflorescence 18 to 20 inches long, simple, five- to six-flowered; flowers 1⅝ inches long, 1⅜ inches wide, slightly drooping, mixed colours, white and pink, white and scarlet, white and magenta, white and purple, white and lavender. [3]

MONARCH STRAIN MIXED. (Raised, introduced and sent by Messrs. Hurst & Son Ltd., Kelvedon House, 60/64 Artillery Lane, London, E.1.) **A.M.** July 25, 1958. Plant 3 to 3½ feet high, very vigorous, erect, much branched; leaves medium green. Flower stems stout, light green; inflorescence 16 to 19 inches long, simple, five- to seven-flowered; flowers 1½ to 1⅝ inches long, 1¾ inches wide, slightly drooping, mixed colours, white and pink, white and rose, white and scarlet, white and mauve, white and magenta, white and purple; throat white. [2]

SCARLET QUEEN. (Raised, introduced and sent by Messrs. Ernst Benary Ltd., Hann-Munden, Germany.) **A.M.** July 11, 1958. Plant 2½ to 3 feet high, vigorous, erect, much branched at base; leaves medium glossy green. Flower stems very stout, medium green, much tinged reddish bronze; inflorescence 18 to 20 inches long, branched, four- to six-flowered; flowers 1¾ inches long, 1 7/16 inches wide, horizontal, Geranium Lake (H.C.C. 20); tube red; throat white. [4]

PERENNIAL PHLOX

The trial of perennial phlox, first started in 1956, has now been made a permanent trial and will be grown each year. Three plants of each variety were planted in November, 1956, and the trial now numbers eighty-four varieties.

The trial was inspected by a sub-committee of the Floral Committee A on July 18 and 25, and August 1 and 8, 1958, and on its recommendation the Council has made the following awards to perennial phlox.

The number in brackets after the description of the variety was that under which it was grown in the trial.

BRIGADIER. (Sent by Messrs. Wallace & Barr, The Old Gardens, Tunbridge Wells, Kent.) **F.C.C.** July 25, 1958. Foliage medium green; flower stems 4 feet long, slender; panicles 5½ inches long, 9 to 10 inches wide,

fairly compact, freely produced; flowers 1½ inches diameter, flat, a colour near Geranium Lake (H.C.C. 20/1); eye Solferino Purple (H.C.C. 26). [43]

TORCH. (Raised by Capt. B. Symons-Jeune, introduced and sent by Messrs. Bakers' Nurseries Ltd., Codsall, Wolverhampton, Staffs.) **A.M.** August 8, 1958. Described R.H.S. JOURNAL, **83**, 30, 31 (**H.C.** 1957). [46]

CAROLINE VANDENBERG. (Raised and introduced by Messrs. B. Ruys Ltd., Royal Moerheim Nurseries, Dedemsvaart, Holland, sent by Messrs. Wallace & Barr.) **H.C.** August 1, 1958. Foliage dark green; flower stems 4½ feet long, stout; panicles 8 to 10 inches long, 9 inches wide, compact, very freely produced; flowers 1½ inches diameter, flat, Amethyst Violet (H.C.C. 35/2). [66]

CHARLES CURTIS. (Raised and introduced by Messrs. B. Ruys Ltd. and sent by Messrs. Wallace & Barr.) **H.C.** July 18, 1958. Foliage light to medium green; flower stems 3 to 3½ feet long, stout; panicles 7 inches long, 9 inches wide, compact, freely produced; flowers 1⅝ inches diameter, flat with edges of petals slightly incurving, Rose Red (H.C.C. 724) fading slightly with age. [40]

GEOFFREY GOATCHER. (Raised, introduced and sent by Messrs. A. Goatcher & Son, The Nurseries, Washington, nr. Pulborough, Sussex.) **H.C.** July 18, 1958. Foliage medium green; flower stems 4½ feet long, medium size; panicles 6 inches long, 9 inches wide, compact, freely produced; flowers 1¾ inches diameter, flat, Crimson (H.C.C. 22/1); eye slightly deeper colour. [19]

LADY CAILLARD. (Sent by Messrs. Wallace & Barr.) **H.C.** August 8, 1958. Foliage medium green; flower stems 4½ feet long, stout; panicles 6½ inches long, 7 to 8 inches wide, compact, freely produced; flowers 1⅝ inches diameter, flat, Petunia Purple (H.C.C. 32/1); eye crimson. [60]

LILAC TIME. (Raised by Capt. B. Symons-Jeune, introduced and sent by Messrs. Bakers' Nurseries Ltd.) **H.C.** August 8, 1958. Foliage dark green; flower stems 4½ to 4¾ feet long, stout; panicles 7 to 8 inches long, 7 to 8 inches wide, compact, freely produced; flowers 1⅛ inches diameter, flat to slightly cupped, a shade of Cobalt Violet (H.C.C. between 634/2 and 634/3). [67]

MARLBOROUGH. (Raised by Mr. F. M. Simpson, Pool Road Gardens, Otley, Yorkshire, introduced and sent by Messrs. R. H. Bath Ltd., The Floral Farms, Wisbech, Cambs.) **H.C.** August 1, 1958. Foliage medium green; flower stems 4 feet long, stout; panicles 6 inches long, 7 inches wide, compact, freely produced; flowers 1⅝ inches diameter, flat, Doge Purple (H.C.C. 732/3). [57]

MOTHER OF PEARL. (Raised by Mr. Alan Bloom, introduced and sent by Messrs. Blooms' Nurseries Ltd., Bressingham, Diss, Norfolk.) **H.C.** August 8, 1958. Foliage medium to dark green; flower stems 4 feet long, medium size; panicles 6 to 8 inches long, 7 to 8 inches wide, fairly compact, freely produced; flowers 1½ inches diameter, slightly cupped, ground white delicately suffused Rhodamine Pink (H.C.C. 527/1). [84]

SAN ANTONIO. (Sent by Messrs. Wallace & Barr.) **H.C.** July 25, 1958. Foliage light to medium green; flower stems 4½ feet long, stout; panicles 8 inches long, 8 inches wide, compact, very freely produced; flowers 1⅝ inches diameter, flat recurved at margin, Magenta (H.C.C. 27). [52]

SILVER LINING. (Raised by Capt. B. Symons-Jeune, introduced and sent by Messrs. Bakers' Nurseries Ltd.) **H.C.** August 8, 1958. Foliage medium green; flower stems 4 feet long, stout; panicles 6 to 7 inches long, 9 inches

wide, compact, freely produced; flowers $1\frac{7}{10}$ inches diameter, flat, Magenta (H.C.C. 27). [31]

WANADIS. (Sent by Mr. Stuart Ogg, Grove Nurseries, Swanley, Kent.) **H.C.** August 8, 1958. Foliage medium green; flower stems 3 to $3\frac{1}{2}$ feet long, medium size; panicles 5 to 6 inches long, 6 to 7 inches wide, compact, freely produced; flowers $1\frac{3}{8}$ inches diameter, flat, white flushed Lobelia Blue (H.C.C. 41/2); eye touched Campanula Violet (H.C.C. 37). [79]

SELF-BLANCHING CELERY

Twenty-three stocks of self-blanching celery, including both golden and green-stemmed varieties, were received for trial at Wisley in 1958. All the seeds were given the hot water treatment as a precaution against leaf spot (*Septoria apii graveolentis* and *Septoria apii*). The trial was sown in 5-inch pots on March 27, 1958, and was pricked out into boxes on April 10. The plants were hardened off and planted out on the flat on May 29, 1958, in rows 9 inches apart with 9 inches between the plants in the rows. The land was single dug during November 1957, incorporating a good dressing of well-rotted garden compost. A base dressing of fertilizer was given at the rate of 2 cwt. per acre of hoof meal, 2 cwt. per acre of bone meal and 1 cwt. per acre sulphate of potash, 18 days before the trial was planted.

The trial was inspected by a sub-committee of the Fruit and Vegetable Committee on September 3, 1958, and on its recommendation the Council has made the following awards to self-blanching celery after trial at Wisley.

The number in brackets after the description of the stock is that under which it was grown in the trial.

CLUSEED LATHOM BLANCHING. (Raised by Mr. A. A. Clucas, introduced and sent by Messrs. J. L. Clucas Ltd., Ormskirk, Lancs.) **A.M.** September 3, 1958. Plant 28 to 30 inches high, vigorous; leaves medium size, light green. Leaf stalks $1\frac{3}{8}$ inches wide at base, thick, brittle, ribs prominent, outer creamy white, inner pale greenish white; heart solid. [5]

DWARF GOLDEN PLUME. (Raised by Mr. T. W. Clucas, introduced and sent by Messrs. J. L. Clucas Ltd.) **A.M.** September 3, 1958. Plant 22 inches high, vigorous; leaves medium size, light bright green. Leaf stalks $1\frac{1}{4}$ inches wide at base, thick, brittle, ribs prominent, outer white, inner pale greenish white; heart solid. [3]

CLUSEED GOLDEN MARVEL. (Raised by Mr. A. A. Clucas, introduced and sent by Messrs. J. L. Clucas Ltd.) **H.C.** September 3, 1958. Plant 24 to 28 inches high, vigorous; leaves fairly large, medium green. Leaf stalks $1\frac{3}{8}$ inches wide at base, fairly thick, brittle, ribs prominent, outer pale greenish white, inner pale white; heart solid. [4]

FLORIDA GOLDEN. (Raised, introduced and sent by Messrs. Ferry-Morse Seed Co., Mountain View, California, U.S.A.) **H.C.** September 3, 1958. Plant 24 to 26 inches high, vigorous; leaves fairly large, medium green. Leaf stalks $1\frac{3}{4}$ inches wide at base, thick, brittle, ribs prominent, inner and outer pale greenish white; heart solid. [11]

GOLDEN SELF-BLANCHING EXTRA. (Raised, introduced and ent by Gebr. van den Berg N.V., Naaldwijk, Holland.) **H.C.** September 3, 1958. Plant 34 inches high, vigorous; leaves fairly large, light to medium green. Leaf stalks $1\frac{3}{8}$ inches wide at base, fairly thick, brittle, ribs prominent, outer white, inner pale greenish white; heart solid. [12]

PLANTS WHICH RECEIVED AWARDS IN 1958

ORCHIDS

Cymbidium (Islander g.) 'Exbury' F.C.C. March 18, 1958. This cultivar was shown with a spike bearing twelve well-shaped blooms, individual blooms being 4 inches by 3½ inches. The parents are *C.* (Ceres g.) 'Radiant' and *C.* (Rosanna g.) 'Pinkie'. The tepals are white flushed with rose reflexed; dorsal tepal incurved. The attractive undulated labellum is white flushed rose with deeper coloured spots; contrasted by the yellow crest and the broad rose-purple column which surmounts it. Exhibited by Edmund de Rothschild, Esq., Exbury, Southampton.

Cymbidium (La Belle g.) 'Dell Park' F.C.C. April 1, 1958. This fine cultivar produced a spike of eight fully developed flowers, each 3¾ inches wide by 3 inches deep. The dorsal tepal is incurved and the laterals reflexed. The general colour is rose-purple with deeper coloured lines. The perfect oval-shaped labellum is yellowish with heavy crimson markings and spots; column is noticeably spotted on the ventral surface. The parentage of this delightful cultivar is *C.* (Flare g.) 'Charmaine' and *C.* (Babylon g.) 'Castle Hill'. Exhibited by H. W. B. Schroder, Esq., Dell Park, Englefield Green, Surrey.

Cymbidium (Alexanderi g.) 'Purity' A.M. March 18, 1958. A cut spike of eleven flowers was exhibited. The individual bloom measuring 4¾ inches by 3½ inches; colour throughout, white, except for a trace of rose shading on the labellum and column. The dorsal is incurved whilst the labellum is recurved, with prominent reflexed side lobes. The parents are *C.* (Alexanderi g.) 'Westonbirt' and *C.* 'Alexanderi'. Exhibited by Messrs. Herbert Hager Orchids, Santa Cruz, California, U.S.A.

Cymbidium (Burgundian g.) 'Castle Hill' A.M. March 4, 1958. *C.* 'Babylon' and *C.* 'Remus' are the parents of this rich rose-flowered cymbidium cultivar. The seven well-shaped flowers were 4 inches across, tepals 1½ inches wide. The attractive labellum has a broad band of rose-red near the lower margin, on a white ground; side lobes lined with a similar colour. The column yellowish with faint lines of rose colouring. Exhibited by Lord Hothfield, Castle Hill, Englefield Green, Egham, Surrey.

Cymbidium (Burgundian g.) 'Chateau' A.M. March 18, 1958. *C.* (Babylon g.) 'Castle Hill' and *C.* 'Remus' are the parents of this fine hybrid. The moderate sized flowers were of a delightful yellowish-copper shade, with an attractive labellum rose coloured, with a crimson band around the margin and scattered spots of the same colour. The column yellowish-white with narrow lines and dots of deep rose contrasted by the yellow crest. Size of individual flowers, 3½

inches by 3 inches. Exhibited by H. W. B. Schroder, Esq., Dell Park, Englefield Green, Surrey.

Cymbidium (Fascination g.) 'Amethyst' A.M. March 18, 1958. *C.* 'Joyful' and *C.* 'Constance Flory' are the parents of this plant. The small rounded flowers, 3 inches by $2\frac{3}{4}$ inches, were of an unusual colour. The deep rose ground, with lines of rose-purple produced a lilac-mauve shade; the dorsal and tepals margined with white. The rounded deep rose labellum had a broad crimson band around the lower margin, with a few isolated bars around the yellow crest. Exhibited by Messrs. Armstrong and Brown, Tunbridge Wells, Kent.

Cymbidium (Fascination g.) 'Rajah' A.M. April 1, 1958. This fine hybrid was obtained by crossing *C.* 'Joyful' and *C.* 'Constance Flory'. Plant shown had a pendulous spike bearing nine medium flowers, each measuring $3\frac{1}{4}$ inches by $2\frac{1}{2}$ inches, colour deep maroon. The dorsal tepal incurved, inner whorl of tepals reflexed, light maroon ground with crimson venation. The labellum displayed a broad base of similar colour with a wide crimson band, column yellowish spotted crimson, crest yellow. Exhibited by Messrs. Armstrong and Brown, Southborough, Tunbridge Wells, Kent.

Cymbidium (La Belle g.) 'Annabelle' A.M. March 18, 1958. This fine cultivar carried a spike with seventeen fully developed flowers, individual flowers measuring 4 inches by 3 inches. The parents are *C.* (Babylon g.) 'Castle Hill' × *C.* (Flare g.) 'Charmaine'. The basic colour is pale rose intensified by deeper coloured veins on the tepals. The labellum is large, open, with prominent side lobes, showing a rich yellow crest, surrounded with crimson markings, lines and spots. Exhibited by H. W. B. Schroder, Esq., Dell Park, Englefield Green, Surrey.

Cymbidium (Lilian Stewart g.) 'Erythrite' A.M. March 18, 1958. *C.* 'Balkis' and *C.* 'Carisona' are the parents of this cultivar. The cut spike exhibited carried eight good-shaped flowers. The colour of the tepals except the labellum is a rich rose on white ground, emphasized by deeper rose-coloured lines. The dorsal tepal is incurved. Labellum $1\frac{1}{4}$ inches wide, white ground with a deep rose-coloured beard extending to the base of the side lobes. The column, rose-coloured and spotted with deep rose, contrasted the golden yellow crest. Exhibited by Messrs. Herbert Hager Orchids, Santa Cruz, California, U.S.A.

Cymbidium 'Memoria Cyril Strauss' A.M. March 4, 1958. The parentage is *C.* 'Mayfair' and *C.* 'Eaglet'. This plant carried a fine spike of fourteen flowers evenly spaced; individually the flowers were $3\frac{3}{4}$ inches across; tepals $1\frac{1}{2}$ inches wide. The general overall colouring was bright pink with richer and heavier coloured veining. The whitish labellum was attractively marked with crimson blotches on a white background, side lobes white with crimson marking, throat yellowish. Exhibited by R. Strauss, Esq., Stonehurst, Ardingly, Sussex.

Cymbidium (Vieux Rose g.) 'Roxane' A.M. March 18, 1958. The parentage of this cultivar is *C.* (Babylon g.) 'Castle Hill' and

C. (Rio Rita g.) 'Radiant'. This cultivar produced a spike with ten well-spaced flowers, individual flowers 4 inches by 3 inches, rosy pink colour, on white ground, veins light crimson. The labellum 1½ inches wide, whitish pink overlaid with crimson band, and spots and broken lines around the column and crest. Exhibited by H. W. B. Schroder, Esq., Dell Park, Englefield Green, Egham, Surrey.

FELLOWS WISHING TO OBTAIN PLANTS RARE IN CULTIVATION

In response to the notice published on assistance in obtaining plants rare in cultivation, on page 4 of the January issue of the JOURNAL, the following requests are published. Will any fellow who is willing to offer one of these plants please communicate direct with the Fellow who is seeking it and *not* with the Editor.

Minetta bicolor	S. Hughes, 18 Cedar Road, Fenham, Newcastle upon Tyne, 4.
Dionaea muscipula, *Sarracenia* spp., *Drosera capensis*	G. A. Sergeant, 24 Station Avenue, Walton-on-Thames, Surrey.
Viola delphinantha, *Raoulia edimea*	H. Esslemont, 9 Forest Road, Aberdeen.
Arundinaria ragamowskii, *Lathyrus magellanicus*	J. T. Swain, 266a Cyfronydd School, Welshpool, Montgomeryshire.
Helleborus lividus	Mrs. E. Mackenzie, Calgary House, Tobermory, Isle of Mull.
Nigritella nigra	F. R. Cooper, Weir Cottage, Mill Lane, Marlow, Bucks.
Lapageria rosea var. *albiflora*	Frank H. E. Siddall, Hardwick Gardens, Whitchurch, Nr. Reading.
Alstroemeria violacea	A. King, 'Oakdene', Hockley Road, Wilnecote, Nr. Tamworth, Staffs.
Gentiana kurroo	Brig. F. R. L. Goadby, Gaunt Hill, Standlake, Witney, Oxon.
Rhododendrons: Stamineum series, Javanicum series	W. F. Carpenter, Fairyhouse, Well Farm Road, Warlingham, Surrey.
Pinguicula vulgaris, *Pinguicula alpina*	R. L. Panes, 35 The Avenue, Kennington, Oxford.
Alstroemeria violacea, *Cyclamen rohlfsianum*, *Paeonia clusii*, *Paeonia coriacea*	E. B. Smith, 46 Archers Road, Southampton.
Centaurea montana var. *sulphurea*	T. Jones, Leckford Abbas, Stockbridge, Hants.
Kurume azalea: 'Ukamuse' (Wilson 47)	G. Whittle, 33 Ravensbourne Ave., Shortlands, Kent.

Primula megaseaefolia	D. H. Valentine, Professor of Botany, The Durham Colleges in the University of Durham, Science Laboratories, South Rd., Durham.
Abies concolor candicans	N. Aldrich-Blake, Weston Hall, Ross-on-Wye.
Arborescent *Lobelia* sp. from E. Africa (Seed only)	Selwyn Duruz, Kallangatta, Cobden, Victoria, Australia
Eustephia coccinea, Calostemma purpureum, Stenomesson coccineum, Phaedranassa spp.	J. A. Bergin, 15 Granard Avenue, S.W. 15.
Helleborus dumetorum	B. Mathew, Little Heath Cottage, Limpsfield, Oxted, Surrey.
Adenium multiforum, Diervilla floribunda, Lupinus hirsutus, Lupinus hirsutus nana, Lupinus ornatus, Kniphofia modesta, Kniphofia leichtlinii, Paeonia officinalis var. *whittalli, Phlomis grandiflora Veratrum album*	Lady Bacon, Raveningham Hall, Norfolk.
Meconopsis wallichii, Ostrowskia magnifica	E. B. Barnes, Bridge House, Lydford, Okehampton, Devon.
Caladium (large-leaved sp.)	F. A. Goodliffe, 8 Bath Street, Bristol, 1.
Dipladenia sanderi, Dipladenia splendens	Mrs. P. Graham Blandy, c/o Blandy Brothers & Co. Ltd., Funchal, Madeira.
Cautlea lutea, Salvia ambigens, Helleborus lividus, Euphorbia robbiae, Berberis 'Firefly', *Plumbago capensis alba, Cobaea scandens alba*	Mrs. Jocelyn Steward, Tunstead Old House, Tunstead, Norwich.

BOOK NOTES

"Camellia Culture." Edited by E. C. Tourjé. Royal 8vo. 484 pp. Illus. (Macmillan, New York and London.) £4 os. 6d.

The Southern California Camellia Society has become well known among camellia enthusiasts by their excellent publication, *Camellia Nomenclature*, which is widely used and acclaimed, and has reached its 6th revised edition. Now the Society has sponsored a volume on camellia culture, with chapters written by specialists on their particular subjects.

The articles on planting and culture have much new and useful information, the directions for espaliering camellias and for moving large plants being two noteworthy features. Likewise camellia propagation and development is dealt with very thoroughly in all its branches. Raising plants by grafting, air-layering, cuttings and seedlings are dealt with in detail, with historical notes adding interest, beside showing there is nothing new under the sun. Information about diseases and pests make one thankful that, due to our climate, such problems do not loom so large here as in the United States.

Although some of the chapters may not have a direct application over here, they do present much food for thought, and show the thoroughness with which the editor, E. C. Tourjé, who himself contributes an article on seedling culture, has collected such interesting yet informative data. Here we have, in one volume, a complete reference book, invaluable to the keen camellia grower.

GILES LODER

"Camellias in the Huntington Gardens." Vol. III. By William Hertrich. Royal 8vo. 366 pp. Illus. (The Huntington Library, San Marino, California.) $10.

The first two volumes of *Camellias in the Huntington Gardens* brought to the public notice one of the finest Camellia collections in America; where, under natural conditions of soil and shade, camellias really flourished, aided by the skill and care of William Hertrich. Now his third and final volume presents more than another two hundred varieties of *Camellia japonica*, bringing the total number illustrated and described to almost half of the fifteen hundred camellia cultivars growing in that famous garden. Furthermore, fifty-five *C. sasanqua* are treated in a like manner, the varieties selected have been used for hedges and ground cover as well as specimen plants.

In all cases an excellent black and white plate, showing both leaf and flower characteristics, is supported by an adjoining text which fully describes all the features of both blossom and foliage in a detailed manner which can be understood by the amateur as well as the botanist. However, of the two-hundred-odd cultivars described alphabetically in this volume, it is doubtful if more than a score are familiar to English gardens as yet. As an aid to naming unknown varieties a cross index giving colour and/or types of flower would have been very helpful and greatly enhanced the use of this most excellent book.

GILES LODER

"Pruning Handbook." Vol. 14, No. 3, of "Plants and Gardens". Demy 8vo. 80 pp. Illus. (Brooklyn Botanic Garden, New York.) $1.

These handbooks, issued by the Brooklyn Botanic Garden, always seem to be able to maintain a very high standard, and this one is no exception. It is under the general editorship of Mr. Paul Frese and contains articles by a number of contributors. The advice seems as appropriate to English gardens as it is to American ones in nearly all cases. The articles cover fruit-tree pruning as well as hedges, conifers and ornamental shrubs.

"Delphiniums", 1959. The Delphinium Society's Year Book, 1959. Demy 8vo. 136 pp. Illus. (The Delphinium Society.) 10s. U.S.A. $1.50.

This is the last volume to appear under the very successful joint editorship of Mr. Ronald Parrett and Mr. Montague Lacey and it certainly keeps up the very high standard which they have set. Next year, Mr. George Cairncross will be the Editor. Of particular interest is the article and colour plate of the rare yellow *D. zalil*, but there are also good practical articles dealing with delphinium breeding and enough about new varieties at the shows, trial grounds and in private gardens to tempt all growers. A special section is included dealing with the Delphinium in Flower Arrangements.

PATRICK M. SYNGE

"Miniature Trees and Shrubs." By Anne Ashberry. 156 pp. Illus. (Nicholas Kaye.) 25s.

To any gardener who is seeking "new worlds to conquer" I would recommend Anne Ashberry's new book, "Miniature Trees and Shrubs". There is an irresistible charm about really small trees and the illustrations of this book show that the personality and natural character of these miniatures are in no way diminished by their lack of inches. The author wisely stresses the fact that these trees grow very much more slowly in troughs and pots than they would do in the open ground. The most important section of the book is devoted to dwarf conifers and of these Miss Ashberry shows accurate knowledge. Perhaps it is a matter of opinion, or personal preference, as to whether the lower branches of some of the forms of *Chamaecyparis obtusa* (the habit of which is very low-growing), the Piceas, and *Pinus sylvestris beauvronensis* should be removed to show the trunks. This treatment undoubtedly makes the little trees look more "grown up", but I am glad that the bun-shaped *Chamaecyparis obtusa caespitosa* has been spared this "lopping". The delicate line drawings of Creina Glegg show in meticulous detail the minute differences which exist in closely allied varieties. They should be studied with a magnifying glass when they will certainly prove a useful guide to identification.

The dwarf roses and other shrubs will probably appeal to a less adult-minded type of gardener. A wide selection is offered and they, too, are competently dealt with.

Descriptions throughout the book are concise and accurate, directions for propagation, cultivation and pruning are clear and the treatment of diseases and pests is not forgotten.

The Tables of Contents and the Index could not be bettered.

GWENDOLYN ANLEY

"Cactus Culture Based on Biology." By Dr. Franz Buxbaum. Translated by Vera Higgins. 217 + x pp. Illus. (Blandford Press, London.) 37*s.* 6*d.* net.

The enthusiastic and original approach of the author of this book is rare and stimulating, and merits high praise, but the claim to scientific principles invites a stricter criticism than would be appropriate to a book which merely claimed to be a practical guide. It is a reviewer's duty therefore to point out that there are errors. For example, while it is true that many cacti grow better in boxes than in pots, experience hardly bears out the statement that the porous flower pot is "a real murderer of plants". It is a little disconcerting, after agreeing with the author's strictures on the multiplicity of soil "receipts", to find that on page 32 he recommends a well-known test for soil moisture as a test for soil composition. On the same page he recommends marl, and then forbids the use of alkaline soil. (But it is fair to say that a later chapter deals carefully with the culture of all the main genera, and includes valuable hints on soil composition for each.) His liking for earthworms in the container is strange, and so are his reasons for it, and there are quite a number of other statements of the foregoing kind which make one reserve judgment on some of his other contentions, such as, for example, that alkalinity of the soil is the greatest enemy of success in cactus growing. More details of the controls used in the experiments would have enabled a truer judgment to be made.

But if the book is taken as a whole, the many sound practical directions completely outweigh the statements which are open to criticism, and the author's enthusiasm and experience have produced an excellent and thought-provoking commentary on all aspects of culture which should be read by all cactus growers. The 23 colour plates and the 95 black and white plates and drawings are generally of excellent quality and there is a good index. The translation by Mrs. Vera Higgins is so smooth that for most of the book one can forget that it is a translation at all.

F. R. MCQUOWN

"Cacti and other Succulents." By S. H. Scott. 159 pp. Illus. (Frederick Warne and Co. Ltd.) 5*s.*

This little book is one of the Observer's Book series and, in the limited space available, the author has covered the ground very well indeed, giving, concisely and clearly, the details of cultivation, propagation and pest control as well as descriptions of the chief kinds of cacti and other succulents that are commonly grown, arranged in botanical sequence. The 16 colour plates and 48 other illustrations are a useful addition to an excellent little handbook.

VERA HIGGINS

"The Control of Pests and Diseases of Agricultural and Horticultural Crops." By G. L. Hey, M.A., and K. Marshall. (Vinton.) 12*s.* 6*d.*

This little book has packed into it a surprising amount of information of great value to growers. It is worth buying if only for the chapters which deal with the chemicals used to combat pests and diseases. These contain a wealth of useful and up-to-date information which is difficult to obtain elsewhere. Other control methods, cultural and biological, are not forgotten, and there is an excellent chapter on spraying and dusting appliances.

The habits, life-cycle and control of many common pests are adequately dealt with, but this section is limited to those pests and diseases which are likely to be met with on commercial crops, e.g. cereals, vegetables, fruit and mushrooms. Pests and diseases of flowers, apart from chrysanthemum and carnation, are not included, and it should be noted that the chemicals recommended for controls are given in quantities suitable only for large areas such as commercial holdings.

Because of these points the book is likely to be less useful to the small gardener than to the farmer, fruit grower and nurseryman, but at the price it is not an expensive addition to the bookshelf.

D. E. GREEN AND P. BECKER

"Maples Cultivated in the United States and Canada." By Brian O. Mulligan. Demy 8vo. 56 pp. Illus. (American Association of Botanical Gardens and Aboretums, John J. Tyler Arboretum, Box 216, Lima, Delaware County, Pennsylvania, U.S.A.) $2.

Acer is one of the many genera for which both gardeners and botanists badly need a new monographic work. It is a genus of great horticultural value. Consequently we should welcome this summary of species and hybrids in cultivation in the United States and Canada and hope for more extensive work later on. It is presented in the form of a check list arranged alphabetically, together with short sections on geographical distribution, cultivars, chromosome numbers in the genus, maples which are not in cultivation but which it would be desirable to introduce, maples for autumn colour, propagation and a bibliography. In a small space this booklet covers a great deal of information and Mr. Mulligan, incidentally a former member of the Society's staff at Wisley, should be congratulated on its production.

PATRICK M. SYNGE

"Deutsche Obstsorten." By H. Krümmel, W. Groh and G. Friedrich. 10 vols. Illus. (Deutscher Bauernverlag, Berlin.) 14.60 DM per vol.

The fifth issue of this work deals with varieties generally less well-known here than those described in the first four, reviewed in R.H.S. *Journal*, 83, p. 271. Most of them are fairly old and have evidently withstood the test of time, but it is to be hoped that future issues may include some newer introductions.

Cherries, many of them local varieties, still form the largest section. The detailed descriptions continue in the same form, and include practical comments on storage, transport and use. How much greater use seems to be made of fruit on the Continent than in this country—as fresh fruit, for various methods of cooking, canning, preserving, pulping, drying, fruit juice, both fermented and unfermented; the last of which one would like to see more of in this country. We are also told whether the skin, of a plum for instance, remains unpleasantly astringent when cooked, a fairly common fault with plums. It is pleasant to learn that certain varieties can be recommended for roadside planting, though some only when there is no danger of theft.

Having now seen half the issues promised, with the standards of description and illustration well maintained, we look forward to seeing the rest of this work.

The apples described in Parts VI and VII of this work are all of German origin, one or two respected old varieties such as 'Danziger Kant', and the rest more or less local varieties suited to various difficult conditions—high altitude, hard winters, etc. The cherries also are native sorts, but the pears and plums are the well-known general favourites such as 'Doyenné du Comice' and 'Victoria'. The descriptions maintain their painstakingly high standard, and the illustrations, so far as one can judge, are accurate. Of interest to us is the poor showing of 'Victoria' plum, which, though widely planted in Germany because of its heavy and regular cropping habit, is of indifferent quality and considered quite unsuitable for processing, and further planting is not recommended.

The following books have been received:

"Intelligent Gardening." By F. R. McQuown. 116 pp. Illus. (Collingridge.) 18*s*.

"Hardy Perennials from Seed." By Roy Genders. 114 pp. Illus. (Foyles.) 3*s*.

"Begonias." By Roy Genders. 160 pp. Illus. (John Gifford Ltd.) 18*s*.

"Easy ways to Good Flower Arrangements." By Mary Badham Kittel. 120 pp. Illus. (Muller.) 21*s*.

"The Grafter's Handbook." By R. J. Garner. 260 pp. Illus. (Faber.) 25*s*.

ORDERS FOR BOOKS

The Society does not sell any publications other than its own. Orders for books reviewed should therefore be sent direct to the booksellers and not to the offices of the Society.

The contents of this volume are copyright. For permission to reproduce any of the articles application should be made to the Council.

KILL SLUGS & SNAILS THE EASY WAY

with

SLUGIT!

SLUGIT PELLETS

Simply scatter the pellets among the plants. Slugit Pellets are easy to apply and deadly in use.

Size 1, 1/6 **Size 2, 2/6** **Size 3, 4/6**

SLUGIT LIQUID

Simple. Efficient. Economical. Just dilute with water and apply to both soil and plants.

4-oz. bottle 2/6 **8-oz. bottle 3/9**

Bring your Pest and Disease Problems along to us on STAND 22, EASTERN AVENUE, CHELSEA FLOWER SHOW

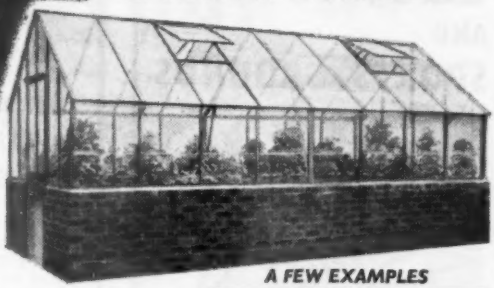
THE MURPHY CHEMICAL COMPANY LTD
WHEATHAMPSTEAD HERTFORDSHIRE

CRITTALL

"CADET"

RUSTLESS GREENHOUSES

FOR ERECTION ON DWARF WALLS



Of special interest to those who require a larger greenhouse for pot plants, forcing and propagating purposes, are our "DW" Type Cadets. These are designed for erection on a dwarf brick wall, or any other form of solid base, and are particularly recommended where a high temperature is required. Supplied complete with glass, putty, glazing clips and foundation lugs they are easily erected from detailed instructions provided and, being rust proofed by Hot-dip Galvanizing, require no painting or maintenance. They are available in three widths and in various lengths to suit all requirements.

A FEW EXAMPLES

WIDTH	LENGTH	PRICE
6' 3"	6' 3"	£22.10.0.
6' 3"	12' 5"	£37. 0.0.
* 8' 3"	16' 6"	£55. 0.0.
10' 0"	18' 9"	£84. 5.0.

* As illustrated

DEFERRED TERMS AVAILABLE
FREE DELIVERY
ENGLAND AND WALES

Send for details to:

THE CRITTALL MANUFACTURING CO. LTD. *Horticultural Dept. C, Witham, Essex*

NEW BIENNIAL AND PERENNIAL FLOWERS

THE POMPONETTE DAISIES. These miniature Double Daisies or Bellis carry a profusion of small, double flowers each one made up of a tight mass of firmly quilled petals. Neat and compact habit. Height 6 ins.

Pomponette Red. Bright crimson-scarlet.
No. 882. Per packet 1/-

Pomponette Rose Shades. Attractive shades of rose and pink. No. 883. Per packet 1/-

MYOSOTIS BLUE BOUQUET. The deepest and bluest of all Forget-me-Nots. Primarily a variety for cutting but useful also for bedding, especially with tall-growing bulbs. To provide cut flowers in winter and spring pot up in autumn and keep in a cold house.
No. 973. Height 15 ins. Per packet 1/-

MYOSOTIS MARINA. The best bright blue Forget-me-Not for spring bedding. The plants grow 6-8 ins. high and are extremely neat and uniform.
No. 1000. Per packet 1/-

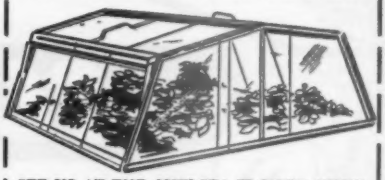
DIANTHUS BLUE HAZE. A first-class bedding plant, rather like a blue Sweet William, with long-lasting and weather-resistant flowers. Blue Haze varies a little in height and colour but the general effect is of soft lavender-blue.
No. 944. Height 12-18 ins. Per packet 1/-

Please add 3d. extra for postage

FREE! *Ask for a copy of our 92-page colour-illustrated Garden Seed Book for details of many other new and interesting flower seeds.*

SAMUEL DOBIE & SON LIMITED
(DEPT. 66)
11 GROSVENOR STREET, CHESTER

"PLUIE" GARDEN FRAMES



SEE US AT THE CHELSEA FLOWER SHOW

★ Instantaneous opening for rain, still leaving side protection.
★ Perfect ventilation. ★ Maximum light.
★ No bolts, putty, etc.

PLUIE MAJOR (as illustrated)
Size 4' 9" long, 4' wide, 20" high in the centre. Price complete £10 10*s.* 0*d.* Extension without ends £9 0*s.* 0*d.*

PLUIE '15'
The latest addition to the famous PLUIE range. Size 4' 9" long, 3' 2" wide, 15½" high. Price complete £8 15*s.* 0*d.*

Both the Pluie Major and Pluie '15' can be raised on a metal base with glass. Ideal for tomatoes and chrysanthemums, also suitable for propagating and raising seedlings and cuttings, heated with soil warmer.

Send for leaflets and Free Cropping Plans

POULTMURE LTD (Dept. RH)
5 COLLEGE ROAD, HARROW, MIDDX.

TENNIS COURTS AND SPORTS GROUNDS

FOR OVER 30 YEARS
THE SURFACE FOR SERVICE

BAFSC

GRASSPHALTE LTD

HAMPTON HILL, MIDDLESEX
Molesey 4343-4-5

WALTER C. SLOCOCK, Ltd.

FOR OVER 160 YEARS

RHODODENDRON SPECIALISTS

AND PRODUCERS OF FIRST-QUALITY

ORNAMENTAL TREES AND SHRUBS, FRUITS, ROSES, Etc.

Please write for copies of our

CATALOGUES

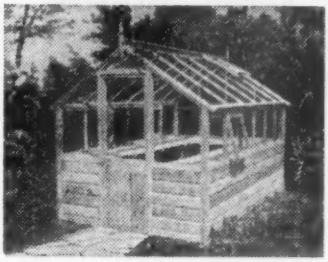
POST FREE

"RHODOS and AZALEAS" and/or "TREES and SHRUBS"

GOLDSWORTH NURSERY
WOKING ∴ SURREY

C. H. WHITEHOUSE
LIMITED

'Phone: FRANT 247 **Buckhurst Works, FRANT, Sussex**



"The IDEAL"
ALL-CEDAR
Greenhouse

Constructed of Western Red Cedar in 6 complete sections including the roof, staging along both sides, glass (24 oz.) cut to size.

The IDEAL Greenhouse for the small garden

Painting Unnecessary • Low in Upkeep Costs

Write for Free Illustrated Catalogue of All-Cedar Greenhouses and Summer Houses

VISIT OUR STAND No. 4 IN NORTHERN ROAD AT THE CHELSEA FLOWER SHOW

The finest method to . . .

ENRICH YOUR SOIL

COFUNA

The perfect farmyard manure substitute. Non-Chemical 100 per cent. organic. This rich soil food will provide all plant life with a natural source of humus to ensure strong natural growth. 'Cofuna' is ideally suitable for use on open cultivated ground, cloches, greenhouses or cold frames, for all specialized or general crop growth. 'Cofuna' is equal in value to 30 times own weight of average farmyard manure.

Small bag to treat 10 sq. yds. . . 3/9
Medium bag to treat 30 sq. yds. 10/-
Large bag to treat 120 sq. yds. 30/-

Obtainable from your local shop.

Large Bags are also obtainable direct from:

CHASE PROTECTED CULTIVATION LTD., 38 CLOCHE HOUSE, SHEPPERTON, MIDDLESEX

By Appointment Nurserymen & Seedsmen

to H.M. Queen Elizabeth The Queen Mother

We publish annually the following Catalogues

TREES & SHRUBS

(price 1/6)

Including Rhododendrons, Conifers, Climbers and Bamboos. Growers commercially of the greatest number of species and varieties hardy in the temperate regions.

Hedging Plants. Hardy Perennial, Biennial, Alpine and Aquatic Plants (price 1/–). **Bulbs. Rose Trees,** including species and old-fashioned types, and **Fruit Trees.**

Please send us your request for those in which you may be interested.

(Request for Tree and Shrub Catalogue must be accompanied by remittance for 1/6 and for Perennial Catalogue by 1/–)

Any not at present available will be sent when published.

HILLIER & SONS

WINCHESTER

Awarded Gold Medal at every Chelsea Show since the War

GARDENING WITH EASE

Are you getting the best out of your hobby? avoiding that fatigue caused by stooping. **COOKS 710 "SUPRA" TROLLEY KNEELER** enables you to move from plant to plant.

Aluminium frame—rubber kneeler.
Overall size 14" × 7"
Price complete 42/6, carriage paid (U.K.)

710 ASH SUPPORT HANDLE
24" Handle stops all movement of trolley and assists gardener to rise.
Post paid 7/6 (U.K.)

Full descriptive brochure of our new patterns free on request.

We regret we shall Not be exhibiting at Chelsea this year

COOKS *(Norwich)* BRUSHES
LIMITED
DAVEY PLACE (18), NORWICH, NORFOLK

The best
BEDDING PLANTS
are fed with
CLAY'S
FERTILIZER

In cartons 1/6 and 2/3
In sealed bags 3½ lbs. 4/–, 7 lbs. 6/–, 14 lbs. 10/–, 28 lbs. 18/–, 56 lbs. 32/–, 1 cwt. 54/–

DOBBIE'S
Dahlias
OF DISTINCTION

Our Exhibit of Dahlias at the Chelsea Flower Show, 1958, received the first R.H.S. Gold Medal ever awarded for DAHLIAS at this great Spring Show.

We will be pleased to post our Spring Catalogue with full details upon request.

DOBBIE & CO LTD
DAHLIA SPECIALISTS
EDINBURGH · 7

your guarantee of quality

Neal's
KETTERING
LOAM

Supplied to Leading Horticulturists for over 30 YEARS

Finest Yellow Fibrous Kettering Loam as exhibited at the Chelsea Show. Also John Innes Composts, Bedfordshire Silver Sand and Nottingham Marl. Quotations for any quantity, delivered by Rail or Road Transport to your door, or loaded on your own lorries if you collect.

Special terms for Horticultural Societies.

KETTERING FUEL CO. LTD. (DEPT. RHS)
STATION ROAD · KETTERING · NORTHANTS

TRITOX

THE ONLY NO-SPRAY SYSTEMIC INSECTICIDE AVAILABLE TO THE AMATEUR GARDENER

Makes Greenfly and other Insects kill themselves

TO USE TRITOX...
dilute with water, soak soil under plants or apply as a drench to the foliage and kill all sap-sucking insects.

Per bottle
3/6 & 6/-
Economy Sizes
11/6 & 21/-

FOR NON-EDIBLE PLANTS ONLY

Obtainable through Boots, Horticultural Sundriesmen, Ironmongers, Chemists, etc.

Sole Manufacturers:
ASSOCIATED FUMIGATORS LTD.
112 VICTORIA DOCK ROAD, LONDON, E.16
Tel.: Albert Dock 2145/6

The Thermal Qualities of

Witchware

APPEAL TO KEEN GARDENERS

The heat-retaining properties save fuel and promote more rapid germination and growth.

Pots (terra-cotta colour) are available in sizes 2½" to 10" to meet all potting needs. Larger sizes are specially compressed and hardened for longer life. Also 9" ring-culture pots.

Seed boxes assembled and ready for use are in three sizes, 10" × 6" × 2½", 12" × 9" × 2½" and 15" × 9" × 2½".

STRONG · LIGHT · DURABLE · WATERPROOF
DO NOT CRACK · SPACE SAVING · INEXPENSIVE

POTS & SEEDBOXES
IN MOULDED RESIN BONDED FIBRE

INVERESK GROUP

Insist on Witchware at your suppliers

WITCHAMPTON PAPER MILLS LTD.
WIMBORNE · DORSET

JUSTIN BROOKE LTD.

WICKHAMBROOK, Nr. NEWMARKET, SUFFOLK

We invite you to visit our nurseries and fruiting orchards at any time, including Sundays—preferably by appointment.

We have a large acreage of nursery stock, including Roses, Peaches, Nectarines, Apricots, Cherries, Apples, Pears, Plums and Figs.

In our fruiting orchards you can see the results obtained by planting similar stocks of all these fruits; and you can see the results at various stages of growth.

PEACHES ON PEACH STOCK

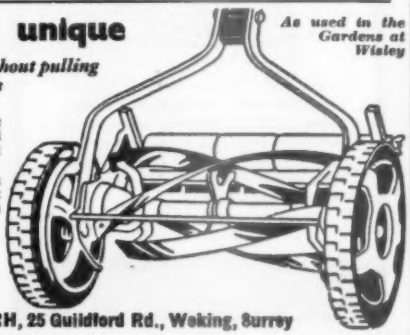
Telephones:

In office hours—Wickhambrook 200 Out of office hours—Wickhambrook 304

THE FLEXA MOWER is unique

As used in the Gardens at Wisley

It will cut with less effort * newly-sown lawns without pulling * long grass up to 12" high * wet or wilted grass



Specially positioned flexible Sheffield steel blades give the Flexa a unique 'scissor-cut' action that does not depend upon finicky fine-adjustment of the cylinder or constant resharpening.

No tugging with the Flexa. It glides over rough, uneven grass just as easily as over a smooth lawn, and will cut to within ¼ in. of the ground—easy propulsion is a main feature of our machines. Please write for full details.

** Grass boxes available all models*

** Every machine guaranteed three years*

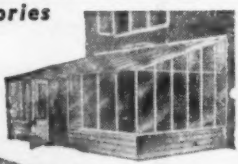
4 sizes (12, 14, 16 and 18-in. cutting widths)

PRICES FROM £8 PLUS P.T.

THE FLEXA LAWN MOWER CO., LTD., Dept. RH, 25 Guildford Rd., Woking, Surrey

Conservatories

Garden Dens...



Garages, greenhouses, loose-boxes and garden buildings of all descriptions.

Hire purchase terms available.

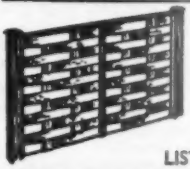
Please send for illustrated catalogue.

ALPHA WOODCRAFT LTD.,

Dept. 24, Star Road, Hillingdon Heath, Uxbridge, Middx. Tel. HAYes 0657

RURAL INTERLACE

The QUALITY FENCING



Only best-seasoned timber used.

This fencing **WILL LAST**

Also Wattle, Osier, Hurdles, Chestnut Fencing, Gates, Arches, etc.

LISTS FREE from:

DAVIDS RURAL INDUSTRIES LTD

Dept. (R), **15 MORETON ST., LONDON, S.W.1** (*Tate Gallery* 8332)

Low Volume Spraying

A low-priced portable outfit of proved performance for spraying insecticides, fungicides, weedkillers, etc., in glasshouses. A compact unit, only 40 lb., ready to plug in to electricity supply. Ample pressure maintained through long hose to Model IM spray gun with quart container—larger pressure feed containers available for continuous spraying. Also suitable for maintenance painting, tyre inflation, etc. Country-wide after-sales service. Deferred terms available. Recommended by Plant Protection Limited.

Spraying 'Shirlan' A G on Tomato plants to control mildew.

B.E.N. the symbol of quality

HANDISPRAY OUTFIT

Demonstration on your premises—no obligation

B.E.N. PATENTS LTD. (Division of Broom & Wade Ltd.) Dept. Y2. HIGH WYCOMBE, BUCKS. CP304

NOW'S THE TIME!

Lawn weeding and feeding

Fisons Evergreen does both best

If your lawn is patchy or weedy, make it grow thick, green and healthy with one complete treatment — with Fisons Evergreen. For Evergreen is an *exact* balance of all the plant foods that grass needs, plus the *two* most searching selective weedkillers that have ever been made. It does two jobs in one go. Now's the time for Evergreen when both grass and weeds are growing strongest. All you have to do is scatter it evenly over the lawn. It couldn't be easier. Cartons from 3/11.

If you have no weeds, feed with Fisons Lawn Fertilizer (cartons from 3/6). If you *only* want to weed, Fisons Ridweed containing two selective weedkillers, bottles from 2/6. To clear moss, Fisons Lawn Sand (cartons from 2/9).

TARPEN GRASSMASTER—The most powerful and efficient electric machine of its kind on the market. It gives you fast, close cutting of rough growth of any height in places inaccessible to mowers and motor scythes.
Price : from £13.10s.

Deferred terms can easily be arranged

Life is much easier with a **Tarpen**

TARPEN ELECTRIC HOE-TILLER—Easily controlled, it thoroughly breaks up ground and chops up weeds, leaving a fine tilth. Ideal for preparing seed beds or for use in rose beds and herbaceous borders. The ½ h.p. detachable motor will also operate the Chain Saw, Polisher/Sander, and Drill workheads.
Hoe/Tiller price : £35

Write for a free leaflet giving all the details of the Tarpen way of making life much easier, with the tool that's REALLY built for the job.

TARPEN ENGINEERING CO. LTD., 24 Ixworth House Ixworth Place, London, S.W.3. Tel: KEN 3491

ORCHIDS

Buy direct from actual producers! Six flowering size Cymbidiums, different colours, for £6; 2 Cypripedium Hybrids, 2 Odontoglossums, 1 Coelogyne, 1 Dendrobium for £5. 10. 0; flowering size Cattleyas 25/- each; thousands of unflowered seedlings and hundreds of curious orchids, send for lists. Our illustrated Booklet "Simplicity of Orchid Growing" will be sent free on application.

MANSELL & HATCHER LTD

Dept. R.H., Craggwood Nurseries, Rawdon, Leeds
(Only 5 miles from Bradford)

VALE for VALUE

GARDEN SHEDS
WANEY EDGE from £8 2s. 6d.
SOFTWOOD F/E from £9 7s. 6d.
CEDAR from £16 10s.

GARAGES
WANEY EDGE from £23 15s.
CEDAR from £29 15s.
SHIPLAP from £31 5s.
ASBESTOS from £29 14s.

GREENHOUSES
from £20 10s.
SUNLOUNGES from £248s.
Carr. paid England & Wales

SEND FOR FREE LISTS—FREE PLANS
New easier terms from 5% Deposit
All types of Fencing, Ladders, Gates, etc.
VALE COUNTRY PRODUCTS
(Dept. R), Barkham Road, Wokingham, Berks.

FENCING AND GATES
PANELS OF OAK, IMPORTED DEAL, OR ENGLISH SOFTWOOD

All types of Fencing and Gates supplied fixed, including Hazel and Osier Hurdles. Fruit Cages, Tennis Court Surrounds, Teak Furniture, etc.

GERALD GILMER LTD.
TEL. 1640/1 **LEWES** EST. 1922
And at BISHOP'S WALTHAM. Tel.: 271

YOUR PLANTS NEED

ECLIPSE **SEDGE PEAT PRODUCTS**

★ MULCHING—ask for details of "no weeding mulch"

★ RHODODENDRONS—special product available

Write for details and free booklet ★ FEEDING—use VITA-MURE double-action plant food

THE ECLIPSE PEAT COMPANY LTD.
ASHCOTT, Near BRIDGWATER, Somerset

---

save your fish from Herons...

with our underwater 6" mesh nylon preventative NETTING. An entirely new, tested method of preserving your fish in ornamental ponds. Made to required size. Price: 4/6 per sq. yd., carr. paid. (Dyed green or other colour, 6d. per sq. yd. extra)

★ *Write for descriptive leaflet to:*
MIDACRES LTD., 24, HYVER HILL, LONDON, N.W.7

YOU MUST TRY THESE EXCELLENT GLOVES!

GARDENING GLOVES
PRUNING GLOVES
HEDGING GLOVES
DIGGING GLOVES

Made from super quality processed thornproof hide.
Also finest quality gloves for everyday wear.
PRICE LISTS POST FREE
Gloves sent on approval

ADA EVERITT *Gardening Gloves*
104, RISBYGATE ST., BURY ST. EDMUNDS, SUFFOLK

OUR CATALOGUE OF

WATER LILIES AND AQUATICS

is full of helpful information on preparing a pond and choosing plants. Free copy sent on request. We send out very hardy stock grown out of doors in our own Nursery.

J. R. TAYLOR, Lily Hill Nursery,
BRACKNELL · BERKS.

Godfreys
for garden machinery

The Mechanized Garden Centre
110 Marylebone Lane, W.1 (Wel. 6842)
and Brenchley, Kent

SANGRAL

TEN-DAY FERTILISER

Made famous by SUCCESS and RECOMMENDATION

JUDGE FOR YOURSELF . . . feed some of your plants with "Sangral". You will see the amazing difference and superiority of the "Sangral" fed plants. The specialised and unique methods of manufacture allied to the use of the finest possible constituents make "Sangral" truly the World's Greatest Liquid Manure.

SANGRAL 'GENERAL' For Flowers, Vegetables, Fruit, Lawns and all Indoor Plants.

Packets 1/–; Cartons 3/–, 5/6; Bottles 2/3, 3/9; Half-gallon 15/–

TOMATO SPECIAL
Produces wonderful fruit of superb flavour.
Bottles 2/3, 3/9; Half-gallon 15/–

CHRYSANTHEMUM SPECIAL
(For Dahlias and Gladioli too).
Choice of the expert.
Bottles 2/3, 3/9; Half-gallon 15/–

A Revision of the Genus Camellia

By J. ROBERT SEALY

THIS is a detailed botanical revision based primarily on wild material of the genus preserved in herbaria. Eighty-two species are recognized and are disposed in twelve sections, and keys are provided for their identification. A comprehensive description is given of each species, with a line-drawing, references to literature, a list of the specimens examined, and explanatory comments. Finally there is a chapter about camellias in gardens—a review of all the species known to have been introduced into cultivation, together with an account of the interspecific hybrids raised during the past thirty years or so. The book, which is a small Royal Quarto (12¼ in. × 9½ in.) of about 230 pages, has a coloured frontispiece by Stella Ross-Craig, 6 maps, 95 line-drawings and a chart.

Price £3 . 10s. Postage and packing 3s.

Obtainable from: THE SECRETARY
THE ROYAL HORTICULTURAL SOCIETY
VINCENT SQUARE, LONDON, S.W.1

THE ROYAL
HORTICULTURAL SOCIETY

INDEX TO JOURNAL AND LIST OF AWARDS

1946-1955

This volume, bound in blue buckram, is a consolidated Index for the ten years, and follows the same style as the two previous Indices to the Journal.

Reduced Price 12*s.* 6*d.*
Packing and postage 1*s.* 9*d.* extra.

U.S.A. $2

Copies of the 1936-1945 Index to Journal and List of Awards are also still available at the same reduced price.

Obtainable from: THE SECRETARY
THE ROYAL HORTICULTURAL SOCIETY
VINCENT SQUARE, LONDON, S.W.1

MAGNOLIAS

The best trees for an exotic effect. Growing well in city gardens.

LILIFLORA NIGRA. Deep purple
SOULANGEANA. White flushed purple
LENNEI. Large purple-rose
STELLATA. Early, pure white

All these are easily grown. Send for our complete catalogue, 1/6

Burkwood & Skipwith Ltd.
Park Road Nurseries, Kingston-on-Thames
Telephone: KIN 0296

BAMBOO CANES

All per	A. Thin	B. Med.	C. Stout	D. Ex. Stout
100	s. d.	s. d.	s. d.	s. d.
12 in.	5 0	5 6	6 6	7 6
18 in.	5 6	6 6	7 6	10 0
2 ft.	6 6	7 6	10 0	12 6
2½ ft.	7 6	10 0	12 6	17 6
3 ft.	12 6	15 0	20 0	25 0
4 ft.	17 6	20 0	30 0	35 0
5 ft.	35 0	40 0	45 0	50 0
6 ft.	40 0	45 0	50 0	60 0
7 ft.	50 0	55 0	60 0	70 0
8 ft.	55 0	60 0	70 0	80 0
10 ft.	60 0	70 0	80 0	90 0

Orders over £2 carriage paid. Under £2 add 2/6 for freight.
C.W.O. Less than 100 supplied at pro-rata rates.
THE BRITISH BAMBOO CANE CO. LTD.
52 LANIVET, BODMIN, CORNWALL

FLORISTRY

A rewarding career or a profitable hobby. Our specialised home study Course in Floristry and Flower Arrangement covers every detail, and all equipment is provided.

Please write for our Prospectus — sent free and post free

THE RIVIERA SCHOOL OF FLORISTRY (H)
PENRYN, CORNWALL

BELGRAVE HOTEL, TORQUAY

welcomes you for the spring months at reduced terms. Situated in the centre of the sea front, with our own sub-tropical gardens and sun lounge, filled with house plants and spring flowers now. Seventy really first-class rooms, on two floors only, with elevator. Central heating throughout. Perfect food, with quiet willing service. Telephone 4818 or brochure from

G. H. Gillin, F.R.H.S.

KNIGHT'S NURSERIES LTD.
HAILSHAM, SUSSEX

Telephone 454

For Alpines
AND
Herbaceous Plants

Send for our catalogue

CARYOPTERIS FERNDOWN
(Award of Merit, R.H.S.)

The new dwarf (2½ ft.) shrub with deep violet blue flowers in September and October. Plant it this season and enjoy really bright colour in the autumn border.

Strong young plants (with planting instructions) 15/– each; 2 for 22/6; 3 for 30/–. Packed and delivered free for cash with order.

Orders are being booked now for early delivery.

Stewarts
Nurseries
FERNDOWN, DORSET **Est. 1742**

RHODODENDRONS
SHRUB ROSES
CAMELLIAS, AZALEAS
FLOWERING SHRUBS
GROUND COVER

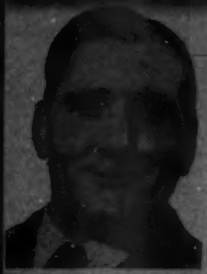
PLEASE ASK FOR LISTS

SUNNINGDALE NURSERIES
The most beautiful nursery in the country
WINDLESHAM, SURREY *Tel.: Ascot 96*

'HART'
Certified
GRASS SEED

Treated against birds and pests
Cash with order, carriage paid, bags free

"Standard" Mixture of Sheep's Hard and Red Fescue, Browntop, R.S. Meadow Grass, S.23, N.Z. Devon Eaver and S.S. Ryegrass. 1-14 lb. 3/- per lb.; 15 lb. and upwards 2/9 per lb. (cwt. rate).
Free on request: (*a*) Grass Seed Mixture Analysis Chart; (*b*) Bulletin of Fertilisers and Horticultural Sundries.
Pre-seeding Base Fertilizer (2 oz. to the sq. yd.) 1/- per lb., minimum 14 lb. and upwards.
Supplied by:—
MAXWELL M. HART (LONDON) LTD
Trial Grounds, Winnersh, Wokingham, Berks.
Phone: Wokingham 1121



DO YOU EVER GO NUTS IN MAY?

asks BOB GREEN, our gardening expert

I've had big, strong gardeners almost weep on my shoulder at this time o' year. All their hard work going up the spout — root pests, foliage pests, slugs and disease everywhere! What a difference now that they're using Jeypeat Compound and Jeyes' Fluid! Their plants are coming on a treat — full of life and health and vigour. If you don't believe this, you haven't tried Jeypeat Compound and Jeyes' Fluid. What about starting now, just for your peace of mind?

THE MOST EFFECTIVE CONTROL EVER OF PESTS AND DISEASE

Jeypeat Compound and Jeyes' Fluid — It's the new technique for gardening success — an amazingly effective protection for plants, plus essential 'tonics for soil! Here are some vital uses for Jeypeat and Jeyes' Fluid this month:

PROTECT GROWING PLANTS

As soon as young plants are about two inches high, sprinkle Jeypeat Compound along the rows, and repeat at fortnightly intervals. *Potatoes too!* When earthing up, scatter Jeypeat Compound lightly along the rows and pull the soil over it. Jeypeat protects potatoes from keel slugs, chafer beetles, eelworms, etc. and Common Scab (Actinomyces).

PREVENT GREEN FLY, BUTTERFLIES, etc.

A weak solution of ONE TEASPOON of Jeyes' Fluid per gallon of water, sprayed once a week on foliage before infestation, deters these pests.

HEALTHY OUTDOOR TOMATOES

Disease is the cause of most tomato failures. Outdoor beds should therefore be *thoroughly* soaked with a strong solution of TWO TABLESPOONS of Jeyes' Fluid per gallon of water. (Directions on containers, or see free leaflet "Jeyes" in the Garden".)

JEYPEAT

COMPOUND

—the amazing 3 in 1 soil treatment

Jeypeat consists of finest sedge peat accurately and correctly impregnated with Jeyes' Fluid. In this form the Jeyes' Fluid content stays active much longer than when used in solution—a big advantage for many purposes.

- Jeypeat Compound cleanses soil of fungus diseases and sterilizing pests
- Jeypeat Compound protects growing plants from root pests. Slugs are killed on contact
- Jeypeat Compound nourishes soil with the humus essential to fertility and promotes healthier growth

JEYES' FLUID

is a really powerful sterilizing preparation that's safe *in use*. Its many valuable uses include sterilizing potting soils, deep-sterilizing badly diseased outdoor patches—deterring foliage pests, winter spraying, and the annual washdown of greenhouses and frames.

The above are only a few of the many strikingly successful applications of Jeypeat Compound and Jeyes' Fluid for FLOWERS, VEGETABLES, FRUIT, LAWNS, GREENHOUSES, etc.

A BOOK IN A HUNDRED!

It's Fred Loads' latest book, "All Grown Well"—a wonderfully helpful guide to successful gardening. Clear, practical, up-to-date, full of good and original ideas. 164 pages — only 4/6d. post free.

FREE!

Write now (block letters please) for free leaflet "Jeyes" in the Garden" —packed with new and better ways of getting the best out of your garden right through the year.

JEYPEAT

COMPOUND

THE REVOLUTIONARY PARTNER TO

JEYES' FLUID

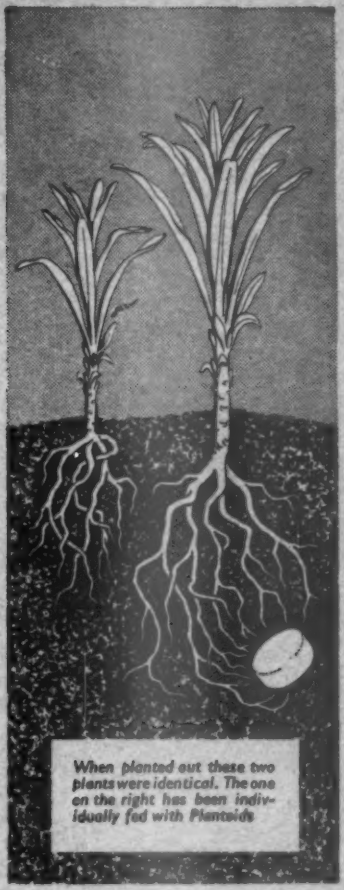
The best disinfectant on earth

JEYPEAT Compound	JEYES' FLUID
Trial Packet 2/6 Pocketful Size 4/9	8ozs.—Pint 2/9 Quart 5/-
Handiman Size 8/- Large Size 12/-	Gal. 15/- Trial Bottles 1/9

From hardware stores, horticultural suppliers, chemists and grocers.

JEYES' (DEPT. RH51), RIVER ROAD, BARKING, ESSEX

Individual feeding for plants



When planted out these two plants were identical. The one on the right has been individually fed with Plantoids

BALANCED FOOD SUPPLY PLACED RIGHT AT ROOTS

Two major disadvantages of broadcast and dissolved fertilisers are:—

1. That, because of their method of application, they encourage weeds.
2. That they tend to be quickly washed below root level.

With individual feeding of each plant by controlled supplies of concentrated fertiliser placed right at the roots, both these disadvantages are successfully overcome.

Plantoids — the fertiliser in *tablet* form — offer just such a method of individual plant feeding. They contain three essentials for promoting healthy, vigorous plant growth — nitrogen, potash, phosphate — together with trace elements for improving colour.

Plantoids also contain naphthalene, which acts as a highly efficient pest repellent giving protection where it is most needed, at the roots.

Application is extremely simple. Just make a small hole by the side of each plant and put in a Plantoids tablet.

Plantoids are available in packets at 2/- and 3/6, and 8/- drums.

PLANTOIDS LTD., BROMLEY, KENT

Printed by Spottiswoode, Ballantyne & Co. Ltd., London and Colchester